

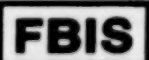
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MILITARY AFFAIRS

No. 1647



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TROOP CONTROL IN GREAT PATRIOTIC WAR: ACHIEVEMENT OF OPERATIONAL EFFICIENCY

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 40-42

[Article by Maj Gen L. Korzun, Cand Sci (Military) under the rubric "Military History": "Operational Efficiency of Troop Control"]

[Text] Effective troop control was one of the factors which determined the success of many operations of the Soviet Army in the Great Patriotic War (1941-45). The article deals with essence and ways of achieving operational efficiency of troop control.

OPERATIONAL efficiency of troop control consists in the ability of commanders, staffs and all control bodies to react quickly and correctly to changes in the situation, to organise actions of the forces for carrying out the assigned mission.

Undoubtedly, the notion of an operational efficiency of troop control cannot be reduced to quick reaction. It is inseparable from a number of other demands on the commander's activity and all troop control agencies ensuring the leadership of the forces. To put it otherwise, when striving for a quick solution one must not forget about its quality. Only then can operational efficiency of troop control be effective in every respect.

In combat practice the concrete ways, forms and methods of achieving operational efficiency of troop control depended every time on the situation, character and content of combat missions, time for carrying them out, etc. For example, the Command of the 65th Army when preparing the Bobruisk offensive operation (June 1944) had nearly 10 days. Such a long period of time made it possible to organise combat actions of the forces in detail.

The commander and the staff of the 28th Army in the Berlin operation (April 1945) found themselves in a more complicated situation. On the

night of April 20, the army was assigned the mission to go into action. But then, late on April 22 when the army was already approaching the commitment line its mission was changed. It was to prevent a strong enemy grouping from breaking through and joining the Nazi forces defending Berlin. The army Command had only 3 hours in which to organise fulfilment of this operation.

More often than not such missions were assigned to tank and mechanised formations. This is understandable, because the rapidly changing situation demanded of the Command immediate and resolute actions. Only mobile forces possessing striking and fire power could ensure a powerful and rapid blow in the necessary direction and press home the attack. Thus, when the 6th Tank Army was committed to a breakthrough during the Jassy-Kishinev operation (August 1944) it had only an hour and a half to organise combat actions at army and corps level.

The process of the troop control, we know, goes on according to a definite scheme: taking an optimum decision, planning the coming combat operations, drawing up combat documents, assigning missions to the forces, organising cooperation.

As a whole, the practice of combat operations confirmed that such a scheme was justified and effective. But at the same time it was proved that it should not be followed blindly. In many cases, particularly when there was a shortage of time for organising combat actions, one was forced to change places, omit or combine separate elements. Therefore, in a number of cases besides a **consecutive method** the Command used also a **parallel method**, in which the work to organise combat actions was carried out simultaneously at several levels.

This method was used by the commander and staff of the 28th Army mentioned in the example above. On being assigned the mission the commander immediately, on the basis of a brief sizing up and estimation of the situation, took a decision on the map and with the operational group arrived at the command post of the 128th Infantry Corps. There he assigned a mission to the corps commander and gave instructions on cooperation. Missions for the other commanders of corps, formations and units subordinated directly to the army staff were conveyed by the parallel method in 30-40 minutes by cipher over the radio. Simultaneously the army commander's decision was entered on the map and a written battle order was drawn up. In no more than an hour and a half it was sent by liaison officers to the relevant staffs. Such organisation of the work allowed all the forces of the army to pass over to the offensive in good time and to fulfil the assigned missions.

In some tank and mechanised formations subordinate commanders were summoned to the superior commander before the decision was taken and took part in working it out. After the decision was taken they personally were assigned concrete combat missions and given instructions on cooperation by the superior commander. This allowed the subordinate commanders to understand the superior commander's plan better, to clear up and solve immediately all the questions connected with assigning the mission and organising cooperation and supply. At the same time the superior commander was able to make sure his subordinates understood the concept of his decision and the assigned missions correctly.

Use of the parallel method was possible provided the forces were constantly well informed of the real situation, peculiarities of the area of combat operations, terrain and weather. Without accurate data on the enemy fire weapons, engineer constructions and obstacles it was impossible to use tanks, etc. The increased manoeuvring possibilities of both sides and the dynamism of combat actions made good information on the enemy

necessary not only on or near the forward edge, but also in operational depth. All this resulted in the considerable increase in the volume of the necessary information on the enemy, friendly troops, and its quick processing.

The increase in forces' rate of advance also made necessary more frequent reception of data on the situation. Army commanders, for example, had to receive generalised information from the subordinate forces every 2-4 hours, and formation commander every 1-2 hours.

A particularly important role for enhancing the effectiveness of troop control and making it more operative, was played by skill in organising work inside the control agency itself. Soviet military leaders showed themselves capable organisers of their staff work. Marshal of the Soviet Union K. K. Rokossovsky wrote the following on this score: "The offensive was prepared by the collective method. Everyone worked within the limits of his functions and helped his comrades. We had a sort of 'headquarters' as we called it where we thought over the plans together, took decisions, listened to the information of the officers responsible for particular sectors of the front, discussed various suggestions, exchanged opinions about the use of different arms of the service and the organisation of cooperation between them. Here all necessary instructions were given. As a result, the Command of the front was well informed on events and we responded to them quickly."

The experience of the war showed that it was necessary for the commanders of all ranks and officers of staffs to visit subordinate forces personally, particularly on the sectors of main blows, on the lines of commitment to action of mobile groups, second echelons, reserves, etc. Usually in such cases commanders were accompanied by numerically small operational groups with radio sets.

Operativeness of the work depended to a considerable extent on the skill of commanders to make an accurate timing when assigning combat missions and to distribute it both according to elements of work and control echelons.

The tendency to give as much time as possible to the subordinates, particularly those of the tactical echelon, was manifested most vividly when time for organising combat actions was limited. For example, when organising the Prague operation (May 1945) the unit and subunit commanders of the 3rd and the 4th Guards Tank armies were given 80-90 per cent of the time available. At the higher command echelons time was reduced by limiting the time for taking a decision, planning combat operations and assigning missions. This

economy was achieved by more rational organization of work and maximum use of technical means of control and not by haste.

Combat experience showed that haste and fussiness in the superior commander and his staff are extremely pernicious. It sometimes happened that hastily taken decisions were specified and changed several times. As a result, the subordinate command echelons received unsubstantiated and contradictory instructions and orders. In this connection the Supreme Command GHQ pointed out in one of its documents that "the commander must take a preliminary decision on the map and then issue the necessary instructions. The decision should be worked out on the terrain and only after that a final decision must be taken and a battle order issued."

Taking a grounded preliminary decision was of particular importance when organizing the work at several command echelons simultaneously. General of the Army A. S. Zhadov recalled that while preparing the Berlin operation the concept of the decision occurred to him while he was with the Commander of the 1st Ukrainian Front at the observation post of the 13th Army, in whose zone his 5th Guards Army was regrouping. The Chief of the Operations Division entered the concept of the decision on the map. When the army staff came to their new location the commander immediately organized operational orientation and issued battle instructions to the commanders of the infantry corps and the attached formations. This made it possible for the subsequent preparation for the operation to be carried out simultaneously in staffs of armies, formations and units.

During the war (mainly when organizing combat actions by the parallel method) the warning orders given after the superior commander took his decision or defined his concept was practis-

ed on an ever increasing scale. They usually contained separate elements of the decision: direction of the main blow in the offensive or concentration of the main efforts in the defensive, assault position, distribution of reinforcing means, etc. However, the concept as a whole and concrete missions were not disclosed in them to ensure secrecy.

Very often commanders assigned combat missions to their subordinates personally. Such a method, particularly on the terrain, provided the possibility to bring them to the executor's notice in good time and simultaneously to work out questions of cooperation. Competent use of radio communication made for increased operational efficiency. Radio signal tables were widely used to increase operational efficiency of radio traffic and maintain the necessary secrecy.

In the dynamics of combat actions the operational efficiency of troop control depended to a great extent on the timely and organized relocation of control points, their speed of forming up into columns and deploying. For example, during the pursuit in the Vistula-Oder operation from 14 to 31 January 1945 the command post of the 8th Guards Army changed location 13 times. Such conditions of the combat situation demanded of the staffs a particularly accurate organization of the movements and activity of control posts.

Under contemporary conditions, as has been proved by the experience of exercises and local wars, the problem of operational efficiency of troop control has acquired still greater importance. Forestalling the enemy, organizing combat actions of the friendly forces in a short time and achieving success in battle depend to a great extent on the high operational efficiency of troop control.

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ARMED FORCES

ARMAMENT SUPPLY OF ARMED FORCES DISCUSSED

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 9-13

[Article by Army Gen V. Shabanov, deputy minister of defense of the USSR for armament, Hero of Socialist Labor: "Technical Provision of the Armed Forces"]

[Text] The 26th CPSU Congress highly appraised the level of development of the Soviet Armed Forces. Characterising them L. I. Brezhnev, General Secretary of the CPSU Central Committee, pointed out: "The combat potential of the Soviet Armed Forces is a durable alloy of high technology, military skill, and indomitable morale." Taking into consideration the theoretical importance of this proposition, the editorial staff of our magazine are publishing the first of a series of articles on the major components of the combat potential of the USSR Armed Forces.

THE COMMUNIST Party of the Soviet Union, its Leninist Central Committee, taking constant care to strengthen the country's defensive might, have always attached great importance to providing the Soviet Army and Navy with up-to-date combat equipment. This is quite natural, since armament and combat equipment are among the most important components of the USSR's Armed Forces war potential.

A deep Marxist substantiation of the role of combat equipment in the armed struggle was given in the works of V. I. Lenin. In the technical equipment of the army Lenin saw the most important indicator of the state's military might, the material basis of the fighting power of its armed forces. He pointed out that in war "those who have the greatest technical equipment, organisation and discipline, and the best machines, will gain the upper hand."

Attaching great importance to Soviet military development, V. I. Lenin defined the ways of technically equipping the Armed Forces. The major ones were: development of the defence industry and all-round use of the achievements of scientific-technological progress. V. I. Lenin urgently recommended comprehensive study of the recent military-technological achievements abroad, attention to the ten-

dencies in the development of technological thought, mastering of all types of weapons, all means and methods of struggle the enemy has or may have.

In all its military activity the Communist Party steadfastly followed and follows today these directions given by Lenin. Between the Civil and the Great Patriotic wars enormous work was done to provide all fighting services and arms with up-to-date weaponry on the basis of the country's industrialisation. By 1941 new designs of combat aircraft were evolved and production of T-34 medium and KV heavy tanks, whose combat characteristics considerably surpassed those of similar vehicles abroad, began in the Soviet Union.

By the heroic labour of the people under the leadership of the Leninist Party during the Great Patriotic War (1941-45) the task of equipping the Soviet Army with the newest and most effective means of armed struggle surpassing quantitatively those of Nazi Germany was solved. Thanks to the superiority of the socialist system the Soviet Union produced during the war twice as much weapons and equipment as Nazi Germany and with higher characteristics. By January 1945 the USSR Armed Forces were superior to the enemy 7.4-fold in aircraft, 2.8-fold in tanks and self-propelled guns and 3.2-fold in artillery and mortars.

The abundant provision of the Soviet Armed Forces with technical equipment was one of the major factors of the world-historic victory in the Great Patriotic War.

The Soviet Union has always opposed the arms race, whipped up by the capitalist countries, and done all in its power to curb it. However, the reactionary imperialist forces invariably rejected the USSR's peaceful initiatives and steadily increased their military-technological might.

Soon after the Second World War the ruling circles of the USA steered a course of accelerated development of atomic weapons and strategic aircraft and missiles. Having the atom bomb monopoly at the time, they embarked on the path of blackmail and began to threaten the Soviet Union and other socialist countries.

It is natural that in the circumstances the Soviet Union was forced to create its own nuclear missile weapon. Relying upon the achievements of the socialist economy, science and technology, the USSR solved this task of exceptional significance in the shortest possible time. In 1949 an atom bomb was designed and in 1953 a hydrogen bomb was produced. In the late 1950s the army and navy were armed with nuclear ammunition and missiles of various radius of action.

All the postwar years were years of rapid scientific-technological progress. This progress favouring a speedy development of the productive forces, increased effectiveness of production, and the flourishing of the country's economy, served and serves at the same time as one of the most important factors in strengthening the defensive might of the USSR: it makes it possible to create new, more perfect types of weaponry at an accelerated rate.

For the technical re-equipment of the army and navy the Communist Party and the Soviet people made wide use of the achievements of the scientific-technological revolution and, in the first place, of the enormous successes of Soviet nuclear physics, electronics, radiophysics, computer technology, progress in the field of gas dynamics, aerodynamics, new types of fuel and construction materials. Modern types of weapons created in the USSR on the basis of the latest achievements in science and technology possess a great range of operation, high speed of action, considerable striking and destructive power and high guidance accuracy.

This was genuine scientific-technological progress in the military field carried out in the interests of strengthening the defensive might of the USSR, with the purpose of reliably defending socialism against imperialist aggression and preventing a third world war.

The appearance of qualitatively new and more powerful types of armament, their mass introduction in the forces and their further improvement naturally led and lead now to changes in the organisational structure of the forces, in their combat formation, in rates of advance, forms of manoeuvre, the character of defence and other types of combat activity. Thus, the creation of nuclear-missile weapons led to the formation of a new independent fighting service of the Soviet Army — the Strategic Rocket Forces — the

major component part of the strategic nuclear forces, which became a powerful factor for deterring aggressors.

However the Motherland's security should the imperialists unleash a war will be secured by a constant and harmonious development of all fighting services and arms of the Armed Forces meeting the requirements of present-day science and technology. Therefore the Party displays constant care to develop and perfect the Strategic Rocket Forces and also the Land Forces, the Air Defence Forces, the Air Force and the Navy.

Relying on the country's constantly growing economic and scientific-technological potential in conditions of developed socialism, taking into consideration the aggressive preparations of the imperialist states, the real military threat they present for the countries of the socialist community and the unrestrained arms race in the capitalist world, the Communist Party, the Soviet Government and the people provide the Armed Forces with the most up-to-date armament and combat equipment, taking untiring care that their armament and provision with technology correspond to the demands of modern war. The Soviet Army and Navy today possess everything necessary for the reliable defence of the gains of socialism, for the decisive defeat of any aggressor.

The Strategic Rocket Forces have missiles, powerful highly accurate thermonuclear warheads and are in a state of constant combat readiness.

The Land Forces are provided with first-class armament and combat equipment. Their main striking force is the tank forces, which possess considerable ability to withstand the effect of mass destruction weapons, high manoeuvrability and great fire power. The motorised infantry units and formations are provided with good all-terrain infantry fighting vehicles (IFVs) and are capable of carrying out long marches in a short time. They can enter battle on the move and without subunits dismounting, operate in cooperation with tanks, manoeuvre quickly on the battlefield, cross water barriers on the move, press home the attack at high speed on contaminated terrain.

During recent years the fire power of the rocket forces and artillery of the Land Forces has considerably increased. The rocket forces of the Land Forces are equipped with nuclear ammunition, their mobility and effectiveness of employment has risen too.

The engineer, chemical and signals troops are provided with the most modern equipment.

The Air Defence Forces have highly effective AA missile complexes, supersonic fighter-interceptors, the most up-to-date radar equipment, automated control systems and communication facilities ensuring timely detection, stable tracking and destruction of any air targets including those flying at extremely low altitudes.

The Air Force has fighter planes armed with air-to-air missiles capable of destroying enemy piloted and pilotless aircraft in all their altitude and speed ranges. The missile-

carrying aircraft, armed with a powerful high accuracy control armament and equipped with all-weather navigation-sighting systems can destroy any ground target with nuclear and conventional ammunition. Military-transport aircraft are capable of airlifting to great distances and landing troops and combat equipment including tanks.

Soviet scientists and inventors have developed vertical take-off and landing aircraft. Soviet helicopter-building has also achieved great successes.

The Soviet Navy has become nuclear-missile capable of combat operations in any part of the world ocean. Nuclear submarines armed with ballistic missiles with powerful warheads are a reliable means of holding the aggressor in check. The aircraft carriers, missile and antisubmarine fighting ships embody the latest achievements of Soviet energetics, missile industry, aviation equipment and radio electronics.

Such is the level of technology of the Soviet Armed Forces today. And all is being created by the strenuous labour of the Soviet people. This high level allows the army and navy to successfully fulfil the complicated and important missions assigned to them — to ensure reliable security of the Soviet Union and other countries of the socialist community.

In speaking of all this we must recall most explicitly that the Communist Party, its Central Committee and the Soviet Government are forced to allot any sums necessary for maintaining a high combat readiness of the army and navy, for securing the safety of the Socialist Motherland and our allies. We repeat: forced to do so, because the Soviet Union never armed itself for the sake of arming, never was and never will be an instigator of the arms race. Its care to strengthen its defensive capacity is conditioned by the military threat stemming from ... imperialism.

During the past decade a military-strategic equilibrium has been established between the Warsaw Treaty countries and the NATO states. This equilibrium is an achievement of basic, historical significance. It serves objectively the security of peace on earth and answers the fundamental interests of all peoples.

The imperialists, the NATO bloc leadership and, in the first place, the USA, disregarding the peoples' interests look the course of upsetting the equilibrium thus established, in their own favour and to the detriment of the Soviet Union and the fraternal socialist countries. The military expenditures of the NATO countries are soaring at an unprecedented rate. In the USA the major part of the money goes to develop new types of strategic nuclear weapons. Creation of a new generation of intercontinental ballistic missiles, strategic cruise missiles, development of the laser weapon with its possible mounting on spacecraft, the striving to deploy on the territories of the West European countries, above all the FRG, the new American medium-range missiles aimed at the USSR and its allies — all these are irrefutable evidence of imperialism's attempts to achieve military superiority.

Today voices are heard in the West saying that the USA must be "the strongest in the world," that NATO must increase its armament and thus exert constant pressure on the Soviet Union and the socialist countries, that the USA and NATO must be ready to deliver "powerful preventive and destructive blows" at the USSR.

Those western circles who hope to achieve military superiority over the Soviet Union should always remember the possibilities of the socialist country. "The economy, science and technology in our country now are at such a high level," Member of the Politbureau of the CPSU Central Committee, USSR Defence Minister, Marshal of the Soviet Union D. F. Ustinov points out "that we are able to design in the shortest possible time any type of weapon which the enemies of peace would like to stake on."

The CPSU and the Soviet Government are conducting a tireless struggle to strengthen peace and detente, to curb the arms race. The "Appeal of the Supreme Soviet of the USSR to the Parliaments and Peoples of the World," adopted at the 5th Session of the USSR Supreme Soviet reads in part: "The safeguarding of peace has been, is and will be the supreme aim of the foreign policy of the Soviet Union." At the same time if the imperialists are arming themselves, the USSR cannot remain indifferent to this. In the Report to the 26th CPSU Congress L. I. Brezhnev said: "We have not sought, and do not now seek, military superiority over the other side. That is not our policy. But neither will we permit the building up of any such superiority over us. Attempts of that kind and talking to us from a position of strength are absolutely futile."

In their endeavours to achieve military superiority over the USSR and the other countries of the socialist community, the imperialists of the USA and other countries lay special stress on the qualitative improvement of armament and equipment. It is but natural that the efforts of the Soviet Union are directed at further scientific research. The interests of the Motherland's defence demand the effective use of the results of the scientific-technological progress for designing prospective types of armament and combat equipment. A unique military-technological policy as a system of scientifically substantiated views on the problems of development of weaponry has been worked out in the USSR for maintaining the technical status of the Armed Forces on the level of present-day demands.

This unique military-technological policy presupposes that the country's defensive requirements of modern means for carrying out combat actions are satisfied both today and in the future. It secures the alliance of industry and science in the interests of creating highly effective types of armament and equipment with the best performances. Its tasks boil down to a rational improvement of weaponry, economy of military labour on the basis of its

broad mechanization and complex automation of the most important processes in the use of combat equipment; all-round perfection of existing and elaboration of new methods of troop control, handling of materiel, development of means of command.

The scientific-technological revolution now in progress makes it possible to create and improve contemporary armament and combat equipment at rapid paces. Soviet scientific-technological personnel always remember this and work with an eye to the future, persistently aiming at making weaponry powerful, the most up-to-date and formidable for any aggressor.

Abundant provision of technological equipment undoubtedly plays a decisive role in gaining victory over the enemy. Nevertheless it is quite obvious that however well the army and navy are armed, whatever armament they may possess — all these are not enough. It is necessary for the fighting men to whom this weapon is entrusted to know it perfectly, handle it skilfully and adopt a creative highly responsible approach to the solution of practical tasks.

The skill of the personnel, their ability to make the best of armament and combat equipment, the high political awareness of servicemen and their morale determine in the highest degree the combat might of the Soviet Armed Forces. Therefore, the CPSU has always attached paramount importance to the training and education of the personnel, to improving training facilities of the army and navy.

It must always be remembered that the armament and combat equipment entrusted to servicemen to defend the Motherland are of great material value. Therefore every

serviceman tries to service combat equipment correctly, to keep it in good condition and maintain it in constant combat readiness.

Improvement of armament and combat equipment is not only the concern of researchers and designers. Great possibilities for such improvement open out during the combat training of forces. And the commanders, staffs and political bodies make all possible use of them.

Displaying a firm will for peace, carrying out a tireless struggle for developing and preserving détente, the CPSU and the Soviet Government are constantly strengthening the USSR's defensive capacity and its Armed Forces. Surrounded by the love of the whole nation, the defenders of the Motherland vigilantly guard the peaceful labour of the Soviet people, train to handle skilfully the weaponry entrusted to them and successfully carry out the tasks facing them.

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ARMED FORCES

PARTY POLITICAL WORK WITH MILITARY CADRES

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 14-16

[Article by Lt Gen A. Agafonov: "The Leninist Style in the Work of Military Cadres"]

[Text]

At the 26th CPSU Congress L. I. Brezhnev said: "The style and methods of leadership are a question of importance to the entire Party, to the whole people." The Communist Party is developing and enriching the Leninist style of work creatively, leaving unchanged its revolutionary essence. In this article we examine the most important features of the Leninist style and its practice in the activities of military cadres in training and educating the personnel.

The training and education of military cadres occupies an important place in the CPSU's multiform organisational and ideological activities in guiding the Soviet Armed Forces. The Party proceeds from Lenin's teaching on the decisive role of cadres in all spheres of communist construction, including the development and improvement of the army and navy.

Soviet officers are full and equal representatives of the Communist Party among the masses of servicemen, the principal upholders of its ideology and policy in military collectives, the bearers of the class, revolutionary and military spirit and combat traditions. They play the leading role in the life and in combat activities of the Armed Forces, in solving the principal tasks of enhancing the combat readiness of the Armed Forces and in training and educating the personnel. The fighting capacity and combat readiness of the army and navy depend to a decisive degree on how the officer cadres are trained ideologically, politically, militarily and technically, on how they exercise leadership of the subordinate units and subunits and on their style of work.

Taking this into account the Communist Party pays unflagging attention to training and educating the command, political and engineering cadres of the army and navy. It strives persistently to make all officers master the Leninist style of work and acquire the qualities of the Leninist type of leaders.

The Leninist style of work consists of a whole complex of principles and methods of leadership, which make it pos-

sible to mobilise the masses most successfully for conscious implementation of the ideas of communism. At its basis lies Lenin's teaching on the Marxist party and its content is permeated with revolutionary creative spirit. Credit for its formation is due first of all to V. I. Lenin. Therefore later this style of work began to be called Leninist.

The Leninist style of work of commanders, political workers and Party leaders is based on the communist ideology, devotion to the Party cause and aspiration and readiness to selflessly implement its policy. It is the leader's ideological conviction and his understanding of the righteousness of the Marxist-Leninist teaching and the Party's policy that imparts Party principledness and ideological purport to his style of work. Commanders, political bodies and Party organisations build their activities on the basis of CPSU's ideology and policy. They constantly endeavour to form in the Soviet servicemen a scientific outlook, socialist patriotism and proletarian internationalism and a deep conviction of their duty to ensure the Soviet people's peaceful labour and safeguard the cause of peace and socialism.

An important feature of the Leninist style of work is unity of theory and practice, word and deed. Every leader must be familiar with organisational practice and take part in solving the concrete tasks and educating the personnel ideologically and politically.

Unity of word and deed has an especially important significance in the activities of one-man commanders. To be true to his word raises an officer as a personality. It is a law in the army and navy that when a commander has said or promised something there can be no doubt that it will be carried out exactly. Any discrepancy between words and deeds undermines the commander's authority.

What is done in units to make unity of word and deed a standard of conduct for every officer? It has been proved in practice that this can be achieved on the basis of an all-round analysis of each officer's work by superiors, po-

litical bodies and Party organisations, strict evaluation of the results of his work, timely advice and comradely help and comprehensive demonstration of ways, means and methods by which he can solve the assigned tasks. This is precisely what is done, for instance, in a motorised infantry unit of the Order of Lenin Moscow Military District. It has become a tradition here for the regimental commander and his deputy for political affairs, jointly with the secretary and members of the Party Committee to analyse not less than once a week combat training activities in subunits and the work of commanding officers: to discuss the achievements secured, the causes of shortcomings and ways of removing them, and to map out targets for further perfecting the personnel's combat training and skill. It is an invariable rule here that if a young officer cannot cope with something he must be helped and all his good qualities encouraged. All this has a positive effect on the education of officer cadres.

The Leninist style presupposes a scientific approach to the organisation of work. V. I. Lenin called upon the cadres to persistently master the scientific principles of work and pointed to the necessity for acquiring a scientific education. Science in our country, he pointed out, should not remain a dead letter or a mere fashionable phrase, it should be bred in the flesh and bone and become really and truly a component element of everyday life.

Today, when on the basis of the decisions of the 25th and 26th CPSU congresses, a radical turn is being made in the USSR towards qualitative factors in all spheres of life, including the sphere of leadership, a scientific approach acquires especially important significance. The Party sees it as the most important condition for increasing efficiency of labour. This applies in full to the Armed Forces. Due to the fact that military construction tasks have become more complex, the role of science in military practice has been enhanced. A scientific approach creates the most favourable conditions for foreseeing phenomena, events and processes in the military field and for setting concrete tasks to the personnel at the right time. For the Soviet officer organisation of work on a scientific basis means to rely on knowledge of the objective laws of social development and military matters, to have a deep insight into the distinctive features of the changes taking place in the Armed Forces and to take into account the requirements of the army and navy and the real possibilities and situation.

The requirements of a scientific approach are being more and more actively embodied in the everyday activities of military councils, commanders, political bodies and Party organisations. They analyse in detail the state of affairs in the units and on ships, the results achieved, shortcomings and their causes and determine the main links in work. The discussion of questions of principle in many political bodies is preceded by a study of the corresponding sections of work on the spot. For instance, it has become a rule with the political department of a formation to work in groups of two or three headed by the political department chief or

his deputy, in two Party organisations every month. A deep analysis and study of the realities help the political organisation to work out and implement scientifically justified measures.

Everything is done in units and on ships for high efficiency to become a distinctive feature in officers' work. V. I. Lenin attributed a big political meaning to the word "efficiency." He underlined that it possesses a class essence, opposing petty bourgeois laxity, bureaucracy and unprincipled narrow-mindedness, by which personal interest and petty considerations are substituted for common interests.

The essence of efficiency lies in unity of the aim and its practical implementation, of decisions and their execution, and the use of methods, forms and means of work that ensure maximum results. An officer's efficiency is manifested first of all in the ability to constantly concentrate the main effort on solving paramount tasks, to subordinate all his activities to achieving the set goal and to ensure thoroughly coordinated and precise actions of his subordinates.

Efficiency is inconceivable without good planning of work. It makes it possible to concentrate attention on the solution of the main problems, to make correct use of forces and resources and to determine concrete dates for fulfilling the measures planned. The plan of work is usually drawn up for a week or a month. It contains dates and the order of fulfilment of the work planned and indicates the executor. Perspective planning for a year and even a longer period is also practised. It determines the basic directions of work, its principal aims and is supplemented and defined more precisely in current plans.

Business-like qualities are developed in military cadres by the entire tenor of life in the army and navy, by the organisation of the service in strict accordance with the demands of all-arms regulations, orders, instructions and purposeful ideological and educational work. As practice shows, a big role is played by the rating of officers, which takes place periodically in the Armed Forces. In the course of the rating the degree of the military cadres' political maturity is determined, their professional training level, the degree of the development of commander's qualities and the correspondence of all political and business-like qualities to modern demands. On the basis of a profound study, mainly of practical activities the expediency of employing this or that officer during the rating and in future is determined.

A tested means of fostering efficiency is checking on execution. An experienced leader systematically verifies his subordinates' fulfilment of the assignment given him. Verification is accompanied by concrete help to remedy omissions or shortcomings of the servicemen.

Effectiveness of verification cannot be ensured without principled criticism and self-criticism. The Party teaches that with the increasing scale and complexity of tasks a strict

and critical approach to all affairs acquires special significance. Criticism helps to eliminate shortcomings and educate the men.

One of the most important requirements of the Leninist style is the sense of the new, the ability to organise work with due account given to new tasks, to show initiative and support reasonable undertakings. Life shows that in military affairs it is hard to count on success without a creative approach and search for untapped resources. Commanders and political workers are the first to see the new and progressive and help its practical introduction in other subunits.

The sense of the new is manifested, first of all, in the search for the most effective forms of training and educating the personnel. It induces one to search and create, to find himself and put progressive methods into practice. In this experiments cannot be avoided. Naturally, in the final analysis, a search may not always yield positive results. But a negative result is also a scientific criterium. Having got a negative result the searcher sort of narrows the range of ways leading to the truth. It is also important that the results of search be made known in other subunits. This will help other searchers to take into account the lessons of the first tests in order to avoid waste of energy and time and will suggest where to look for the most rational variants. Of course what is especially necessary is effective information after the experiment ends successfully. The faster progressive experience is adopted by other collectives the shorter will be their road to success.

To possess a sense of the new means to fight inertness, stagnation, complacency and to foster in the personnel a creative approach to work. Sometimes life prompts the necessity to give up the habitual evaluation of known events and to approach them in a new way. Most often initiators in this are Communists — commanders, political workers and other servicemen. They uphold in all ways the creative atmosphere and the spirit of innovation in the subunits. Communists follow the newspapers and magazines with great attention. Collectives discuss problem articles and decide jointly what innovations are acceptable for the unit and what not. Questions deserving special attention are submitted to Party meetings or plenary meetings of Party committees (bureaus).

Characteristic of the Leninist style of work is an indissoluble tie with the masses, reliance on their experience and constant attention to the satisfaction of their requirements. The Communist Party steadfastly follows the Leninist traditions of living in the midst of the masses, knowing their moods, real requirements, aspirations, thoughts, being able to win their confidence through a comradely attitude and careful satisfaction of their needs.

An effective means of strengthening the Party's ties with the masses, it was noted at the 26th CPSU Congress, is publicity of the work of Party organisations. Great significance is attached to informing all Soviet citizens on the life and activities of the CPSU and its most important decisions.

In the conditions obtaining in the army and navy various forms of ties with the personnel are used by commanders, political workers and Party activists. Among these the superiors' contacts with servicemen on the spot in subunits, where success in combat training is forged, are of exceptional significance. Such contacts enrich both superiors and subordinates, because they provide the most favourable conditions to teach and direct the men and to learn from them.

An effective form of personal contacts is the single political day — a system whereby the leaders of military districts, groups of forces, fleets, formations, and also the leaders of the republican and local Party and Soviet bodies address the personnel of companies, batteries or squadrons. They explain to the servicemen urgent present-day problems of the Party's policy, inform them of the achievements in communist construction, the course of fulfilment of combat training and political education plans and other questions. Talks with the servicemen help them to understand more deeply the life of military collectives and to exert effective influence on the solution of problems that crop up.

Mastering of the Leninist style of work is a sure guarantee of the successful realisation of the Party's policy and a necessary condition for further raising the combat readiness of units and subunits. Military cadres see it as their duty to constantly improve the style and methods of work and to concentrate their main efforts on the live organisational work among the masses of servicemen.

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OFFICER'S AUTHORITY DISCUSSED

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 30-31

[Article by Col Ye. Besschetnov: "The Soviet Officer's Authority"]

[Text]

A Soviet officer, whether he is a commander, political worker, engineer or technician, has complex and important obligations. He is the upholder of the Communist Party's policy and ideology among the masses of servicemen, the organiser and leader of the men's everyday life and activities, the bearer of glorious combat traditions and progressive military experience, the mentor of his subordinates. He also represents the state authority in the Armed Forces.

The very fact of the official status of the Soviet officer gives him great authority in a military collective and sets him in a place apart. But these favourable prerequisites for the officer's successful activities cannot alone automatically ensure him undisputed authority. He must possess high personal qualities and show his worth by practical deeds and the ability to work with the men. An order coming from an officer is not only an administrative demand of a representative of authority — it also carries additional moral strength, prompting the men to carry out the order consciously. The servicemen's attitude to the one who issues the order and the depth of their respect for him as a personality play by far not the last role. Thus, prestige is an important condition for the commander to fulfil successfully his difficult obligations.

An officer having professional prestige is distinguished by many remarkable qualities. First of all, communist conviction, Party principledness, high professional training and deep knowledge of military affairs. The subordinates wholeheartedly respect those officers who like their combat

profession, fulfil their official duties imaginatively and with a sense of responsibility, have an aptitude for organisation, efficiency, practical know-how and ability to notice and support in time all that is new and progressive. Purposefulness, initiative, self-restraint and persistence in carrying through to the end the work begun is also characteristic of an officer enjoying authority. He is always tactful with his subordinates, not only demanding much of them, but also displaying consideration for them, respecting their personal dignity and showing fairness in everything.

To win prestige is not a simple matter. It requires hard work and more hard work, constant striving to improve one's personal qualities. Success depends to a certain degree on how deeply and thoughtfully the officer analyses the results of his practical activities, his mutual relations with the men and on his behaviour. This is important especially in the period when the officer, say, has just assumed command of a subunit or when new men have joined the subunit he commands and influenced the microclimate there. In both cases he has to enter into a new cycle of relations and to feel what must distinguish his style of work in the changed conditions. At this stage more than ever the officer should be consistent, composed and resourceful in his personal behaviour and his work with the men. If he is able to show the necessary qualities he can be sure that his activities will proceed more successfully. As an example we would like to cite Lieutenant Viktor Bakulin, a recent graduate of the Tashkent Higher All-Arms Command School.

On arrival at his unit the young officer was appointed platoon commander. He felt excited at the thought of his first meeting with his subordinates. He prepared for it. In particular, Bakulin drew up for himself in advance a number of rules and standards of behaviour which would help in his relation with the soldiers and at the same time enhance his prestige. He planned to be outwardly calm, even-tempered, sober-minded and to introduce a measured and solid rhythm into his work. He decided that in any matter he would be guided above all by the interests of service. He likewise thought over the principles of planning in work, made it a rule always to formulate precisely and clearly the main tasks for the day, week, month and training period, to organise everything, no matter how insignificant it might appear, thoroughly and to avoid formalism in every undertaking.

It was in this psychological frame of mind that Lieutenant Bakulin arrived at his first meeting with the platoon personnel. The men saw in him a serious, thoughtful and responsible officer and were inspired with respect for him.

Days of intense training started. There were many happy days for the officer. Things went well at once with the platoon. The lieutenant clearly pictured the line of his behaviour and his relations with his subordinates and tried to strengthen and enhance the first favourable impression he had made on his subordinates. He analysed with care each step he made, trying to be simple and humane and at the same time not allowing his subordinates any familiarity.

In time a system of work of his own took shape. For instance, to strengthen discipline in the platoon, he noted himself the following: before issuing an order or instruction he must weigh well to whom he should give the assignment, think of the most convincing and mobilising form of issuing the order, define precisely the amount of work, time for fulfilment and the method of reporting.

An important line in the officer's activities is the training and education of his subordinates. It is a delicate and complicated affair, for each one of them has his own unique personality, and a character proper to him and unlike any other. If the officer wants to win genuine, effective prestige he must constantly take into account the individual peculiarities of his subordinates. Today's army youth have an extremely developed sense of pride and demand tactful approach and respect towards them. The fighting men keenly react to any

lack of tact towards them. The more strictly the officer adheres to the recommendations of pedagogics, to a sense of tact in his relations with the soldiers and sergeants, the sooner and more surely will he win their hearts. It is precisely in the sense of tact that his highly moral attitude to the men around him is manifested most forcibly. Tactfulness serves as a kind of criterion of the appropriateness and profit of the pedagogical methods he uses. In the final analysis this promotes greater effectiveness of leadership, better quality of the men's training and education and strengthens the officer's authority.

Authority is a field of delicate relations between personalities. In everyday contacts both subordinates and superiors willy nilly grow accustomed to what an officer does and how he evaluates his own behaviour and actions. It is very important that he should be able, as we say, to look truth in the face, not to flatter himself with successes and to evaluate objectively his shortcomings as well as his merits. It is a known fact that his appointment to a command post does not always safeguard him against neglect of duties. Therefore he must have enough courage to admit honestly any errors he may commit (there is nothing to be ashamed of in that) as a matter of principle and without fear of wounding his self-esteem and to be persistent in his efforts to eliminate them. Advanced officers' experience shows that this not only does not undermine authority, but, on the contrary, enhances it. The men see their officer's self-criticism and readiness to overcome false pride and are filled with great respect for him because of it.

Without doubt every officer would like to win the respect of the men around him and to enjoy high prestige. But not all of them see the right road to that, especially young, inexperienced officers. Some of them cannot find the right tone in their relations with men. There are instances when a young officer tries to create artificially a sort of "distance" between himself and the subordinates, to maintain only official contacts with them. Another one tries to appear all-knowing, although actually he is not, and begins to lecture the soldiers endlessly, mistakenly believing that this way of reprimanding is the main means of education. Harmful also is another extreme — the striving to win prestige by connivance, by making allowances for shortcomings and lowering exactingness.

Experienced commanders and political workers who care for the education of young officers warn them against taking rash steps and teach

them from the very first days of their service to avoid actions that lead to false prestige. They make it an object of their constant care to cultivate in young officers the Leninist style of work.

It is hard to overestimate the role and significance of the officer's prestige in the fulfilment of his complex and important obligations. Genuine authority helps raise the fighting efficiency and combat readiness of units, ships and subunits, organise training and education on high level, more actively form in the men political conviction and consciousness, moral, combat and psychological qualities and skill to master combat equipment and weapons.

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ARMED FORCES

IMPORTANCE OF SELF-IMPROVEMENT DISCUSSED

MOSCOW SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 34-35

[Article by Captain 1st Rank M. Tikhonov, Cand Sci (Philosophy): "Moral Self-Education"]

[Text]

The Soviet fighting men, like all Soviet people, are distinguished for their fine moral qualities. This is the result of the day-by-day activities of the CPSU, which has always attached great significance to the moral education of the people, especially youth. Speaking at the 3rd Congress of the Young Communist League on October 2, 1920 V. I. Lenin stressed that all educational training activities among the youth of our day should be concentrated on educating it in the communist morale.

Moral education in the Soviet Armed Forces is part and parcel of political and military education. Its significance is enhanced by the high degree of responsibility the army bears for guarding the labour of the Soviet people, by the profound changes which are taking place in military equipment, and the ever-sharpening ideological struggle on the international scene. The high morale of the Soviet Army man is manifested in his active attitude towards life; he realises that he is the master and the guardian of his country.

The moral education of Soviet military personnel has been greatly influenced by the socialist way of life and the social environment. In many respects servicemen's morale is formed by the nature and methods of military and political education and training, by the requirements of the oath of allegiance, the military regulations and the orders of the commanders.

A special role in this respect belongs to self-education. This is an integral element of the general process of moral education. It is attained

through man's own conscious will and effort to develop the necessary moral and ethical qualities.

Moral self-education implies a definite degree of consciousness in the individual, it requires a certain capacity for introspection and self-estimation. Estimating his actions from the point of view of motive and purpose, the individual makes the necessary amendments and thus improves his behaviour and perfects himself as a personality. This applies both to the physical and professional as well as to the moral aspect of the individual.

The shaping of a soldier's moral make-up though greatly affected by the commanders, political workers and the military collective cannot be entirely attributed to these factors. The opposite view, under certain conditions, would definitely diminish the soldier's responsibility for his actions. (Incidentally there are cases when men try to shift the responsibility for their wrong behaviour and for their vices onto their superiors and comrades, who, they allege, failed to influence them in the proper way.) Of course a man's personality is shaped by society and the social group he lives in. However a military man can and must conscientiously cooperate with these factors, define his role and place in the specific collective, choose the right line of life and behaviour. The Soviet military collective provides all conditions for moral self-perfection of the personality. In the final analysis it is up to every individual to use them to the best advantage.

The Soviet Army men respect the communist morality and ethics above all because of their

ideological maturity and conscientious responsibility for their behaviour, but not for fear of the law. Their conscience is their chief controller. They act properly not because they are so required by superiors and comrades but because they are internally motivated to act in this way by the calls of conscience and dignity. A morally mature person does his duty both under and out of external control and observation.

A man may be aware or not of his moral and ethical maturing. Doing his share of duty he unconsciously acquires many positive features, such as honesty, kindness, resource, will-power, etc. Yet a conscious process is much more preferable, for it helps to realise and overcome the individual weaknesses that handicap one's moral growth.

A major instrument of moral self-education is will-power, which allows conscious and purposeful control of the individual's activity. Sometimes service duties do not coincide with his wishes, and this leads to a psychological contradiction between "wish" and "must."

This contradiction can hardly be resolved without a definite wilful effort. A weak willed man is a puppet of external circumstances, while a man possessing strong will-power turns them to his purpose. The controlled process of his moral maturing is more successful.

Self-education proceeds through overcoming both external and internal obstacles. In overcoming them an individual combats his own vices and wins victories over himself. Thus moral self-perfection is only possible in practical activity.

Will-power is not only essential for admitting one's shortcomings to oneself or publicly but to even a great extent it is needed to get rid of them. If for instance a soldier realises that he may fail to accomplish a certain risky training assignment because of fear, he can suppress this undesirable feeling by self-control and wilful autosuggestion.

There are no people absolutely devoid of fear, but different people react to danger differently. Staunch and hardened people can suppress their fear and make themselves act as their duty demands. The famous Soviet military airman, thrice Hero of the Soviet Union Ivan Kozhedub who shot down 61 enemy aircraft during the Great Patriotic

War writes: "...Of course the fear of death never passes altogether, but by an effort of will one can choke and suppress this fear." In a man with strong ideological convictions, with deep belief in his true cause, mortal danger can produce diametrically opposite feelings: courage, vigour, determination, etc. Ideological conviction is the best soil in which those finer psychological and military qualities can be cultivated which allow a man to emerge victorious out of seemingly hopeless situations.

The stronger a man is ideologically, the finer his moral status. The communist ideological conviction is the most valuable feature of a Soviet citizen. This conviction is the source of a soldier's tenacity and determination to overcome all difficulties on the way to his goal.

Self-perfection requires an example to follow. Since self-improvement includes comparing and measuring oneself against some model, this model should be a man of higher moral virtue, conviction and valour. An impressive example of these virtues is provided by the lives of K. Marx, F. Engels and V. I. Lenin, whose activities were totally dedicated to the struggle for the freedom and happiness of the working people. Immortal examples of dedication and mass heroism can be found in the history of the Civil War in Russia (1918-1920) and in the Great Patriotic War (1941-1945).

Examples to follow in the present reality can be found among generals and admirals, officers and men who excelled in their professional activities. Many young soldiers choose prominent personalities as examples on which to model their life and try to develop in themselves the best qualities they see in their commanders and comrades-in-arms.

There is a certain relationship between the actual moral state of a man and his attitude towards further self-perfection. The higher this state is, the more he is inclined to work on further improvement. Virtuous people tend to admit their drawbacks and strive to correct them. A critical attitude to himself and the ability to see ways of self-perfection are positive signs of a soldier's moral maturity.

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USE OF IN-FLIGHT MONITORING EQUIPMENT DISCUSSED

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 22-24

[Article by Col Gen Eng V. Skubilin: "Instrumental Monitoring"]

[Text]

As the aviation equipment becomes more and more sophisticated, the role of instrumental monitoring of its condition and serviceability becomes more extensive. On-board and ground monitoring aids (MA) find at present extensive application in aviation.

On-board facilities include built-in MA, indicators, automatic monitoring systems and recorders. Such a broad range of the checking equipment is explained by the complexity and peculiarities of modern aviation equipment. To increase the efficiency of its combat use the on-board systems of aircraft complexes are made, as a rule, multifunctional and their fail-soft redundancy is provided. Various devices and special equipment which make up instrumental monitoring equipment are designed for prompt checking of each aircraft system.

Systems of on-board aircraft equipment are characterised by high performance but their normal operation depends first of all on the efficiency of their integration between themselves and sometimes with a number of exterior devices such as ground radio beacons, control systems, etc. Normal operation of such systems is ensured by exact adherence to all the tolerances assigned for certain parameters.

Strict observance of the metrological rules and use of a great number of precision instruments for checking the on-board equipment guarantee high quality monitoring of aviation equipment.

On-board flight-data recorders, in particular, are acquiring increasing significance. They are used not only to train aircrews and analyse the

efficiency of the equipment in flight, but also to guard against undesirable incidents that might happen in unforeseen situations during flight.

On-board flight-data recorders register data in all operating conditions and throughout the whole range of altitudes and speeds. This allows a thorough analysis of the flight as a whole or any of its aspects.

All this requires of the personnel profound understanding of the processes taking place in aircraft and engine systems. Analysis of information supplied by MA enables the specialists to comprehend well the general laws of operation of aircraft systems, to prevent equipment failures and increase the quality of flight mission fulfilment by the pilots.

Knowledge of the monitoring aids and on-board automatic flight-data recording means is of great importance for ensuring air safety and effective training of flying personnel. The possibilities of their usage are constantly expanding.

When recorders were first introduced the personnel of the aeronautical engineering service had to display a creative approach to the use of data obtained. Systematic analysis of information supplied by the recorders and the limited time for data processing helped improve the organisation of between-flight checks of aircraft serviceability and the aircrews' flying standards.

Skilful use of MA and analysis of the information obtained make it possible to reveal in time faults in operation of the equipment which cannot be noticed in flight by direct observation. The same

facilities help reveal any errors committed in operating the equipment and performing flying missions.

Monitoring aids usually do not actually record the actions of the pilot or another member of the crew. But in a majority of cases many recorded parameters, such as positions of aircraft control surfaces, change in engine rpm, values of transverse and longitudinal g-loads and others, characterize fully and accurately enough the pilot's actions in controlling the plane, his condition and the circumstances in which he works. Therefore it may be concluded that MA decoded data besides being of great help to the flying and engineering personnel, contain a lot of valuable information for other specialists as well (e. g. medical officers). Numerous investigations and observations proved that the character of man's movements reflects with exceptional accuracy any nuances in his condition and intentions, and the effect of environmental factors.

Instructive in this respect is the following incident. A young pilot performed a high-altitude en-route flight. When looking over the tape recording of the flight data, the commander's attention was drawn to the section beginning at the 12th minute of flight. To assess more objectively the pilot's actions in flight the commander turned to the unit medical officer for help. Comparing the MA data with the condition of the pilot during the whole flight the physician paid special attention to the pilot's actions in controlling the tailplane. Before the 12th minute his motions were normal and did not differ much from those in a previous flight performed in similar conditions. But from this minute onwards they showed a certain laxity, becoming gradually less purposeful and even rather chaotic. From the 15th minute of flight the tailplane control became normal again. During these three minutes the altitude of flight considerably decreased while the speed greatly increased, though this had not been envisaged in the assignment.

It was difficult for the physician to find the cause of these deviations. The flight was performed at a high altitude. Taking this into account and also the character of changes in tailplane movements and other signs he assumed that at a certain stage of the flight the pilot was in a condition of hypoxia (lack of oxygen in the blood).

His conclusions proved to be right. During the post-flight critique the pilot reported that in flight he found that his oxygen tube had been disconnected. The cause of the incident was hasty preparation for the flight.

Recording of pilot's psychological and physiological parameters helps to make a more comprehensive assessment of his condition and capabilities, which is especially important when mastering new or complicated flight elements. At the same time the rehearsal of emergency situations (like failures of flight instruments, acute shortage of time for adopting a decision and taking the necessary measures) makes it possible to single out pilots with insufficient emotional stability, to disclose its causes and take necessary preventive measures.

Nowadays the results of instrumental checks find ever greater application during professional and psychological selection of candidates for flying and other military schools. They help to reveal those who meet the requirements of concrete military specialities, are capable of assimilating the whole of the training programme and then qualitatively discharging their duties. Those who want to become military pilots undergo tests in special laboratories during which their attention, memory, emotional stability, quickness of reaction, spatial coordination and other qualities are checked. The results of professional selection are not only taken into account but are considered decisive in admitting applicants to the school.

Instrumental monitoring also plays an important part in strengthening flight discipline, as records of on-board monitors make it possible to determine with great accuracy any deviation in flight parameters. It also helps in observing the development of skills. At present the flying personnel get acquainted with the MA equipment and learn to decode the records while still in school. These data are constantly used by all concerned both during the general analysis of flights and in between-flight periods. All this contributes to increasing the quality of mission accomplishment and to the safety of flights.

Monitoring and checking aids are being continually developed. For example, further improvement of on-board recorders follows the line of increasing the accuracy and number of parameters being registered, and recording the most informative data. Instrumental monitoring systems and aids should warn the crew of complicated situations. Besides, they should ensure preservation of all the current information irrespective of environmental conditions, efficient and continuous monitoring of the condition of aircraft engines and systems, timely detection of deterioration of their characteristics and information that a device is faulty and needs replacement.

Ground monitoring aids now also play an important role. They enable the specialists of the

aeronautical engineering service to increase the reliability of aviation equipment. Steps are being taken at present to reduce the time necessary for checks and to increase their efficiency. It is planned to achieve this by automation of checking operations and improvement of methods for programming joint work of specialists of different services on the aircraft. To prevent faults due to destruction of power packs in the structures of flying vehicles, units are provided with various flaw detectors.

Defects at the spots inaccessible for direct observation can be detected by ultrasonic and radiation methods. Modern ultrasonic flaw detectors locate a defect and determine its size. Using the radiation monitoring method it is possible to find out, without disassembling the panels, wide cracks in, for instance, wing spars, to detect cavities, incomplete fusion of seams, foreign objects and water in honeycomb sandwich structures. Even small failures in adhesive joints can be found by the sonic method. To detect mechanical wear, corrosion damages, punctures, breaks and residual deformation, use is made of optical instruments. At spots difficult of access and for checking separate parts it is advisable to use optico-visual, eddy-current and ultrasonic instruments. In some cases use can be made of the X-ray method.

Prolonged use of flaw detection methods in units has proved their high efficiency.

We see that nowadays the Soviet Air Force is equipped with reliable modern instrumental monitoring and checking aids which help in maintaining the aviation equipment in constant combat readiness and successfully carrying out the tasks assigned.

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AIR FORCES

HELICOPTER LOW-ALTITUDE FLIGHT TRAINING DISCUSSED

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 25-26

[Article by Lt Col Eng Yu. Malakhov, Cand Sci (Technology): "Ground-Level Flights of Helicopters"]

[Text] Flights of helicopters at low altitudes, at ground level, are becoming quite common. They have a number of peculiarities which should be taken into consideration in training the personnel and preparing them for flights in these conditions.

In low-altitude flights the induced flow from the rotor slows down at ground level, producing increased pressure. This, in turn, raises the rotor lift force by approximately 10 per cent. In calm weather the air cushion effect is felt to a height equal to the rotor diameter.

Flight manuals contain nomograms, by which one may calculate the helicopter maximum take-off weight taking into account the effect of the air cushion. This effect depends to a great extent on the speed and altitude safety requirements. For example, Mi-8 helicopters can perform flights over difficult terrain at altitudes of up to 20 m with a speed of up to 60 km/h, while the speed at altitudes below 10 m should not exceed 20 km/h.

In mountains the helicopters not infrequently hover over the slopes and the pilots should take into account the effect of the air cushion. The lesser the distance between the rotation plane of the rotor and the ground the greater the rotor lift. And vice versa (see Fig. 1). Forces arising on the rotor as a result of this effect cause a lateral downward

displacement of the helicopter. Hovering over such terrain is impossible without a bank, the bank angle being approximately equal to the slope angle.

In these conditions the crew should be especially careful when taking off and landing, because as the thrust increases the helicopter begins to slip downward or may even overturn under the action of the weight and aerodynamic forces.

An increase in the rotor thrust may cause the helicopter to over-

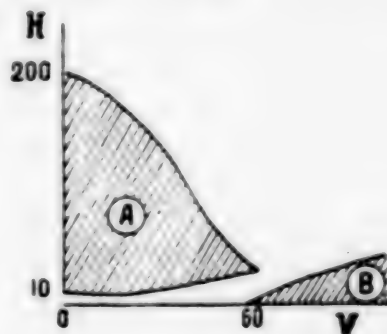
turn onto the slope, the lower wheel being the first to leave the ground. It should be noted that the stability limits specified in the helicopter flight manuals are calculated for an 0.4 friction factor. If it is higher the stability limits are extended, while at a friction factor equal to 0 (for instance on icy ground) they narrow sharply.

Flight tests show that a medium helicopter can land safely, without shutting off the engine, at slope angles of up to 6°. At greater angles the landing becomes much more complicated and the risk increases.

To ensure safe flights of helicopters at ground level, one should know the dangerous regimes. For the Mi-8 helicopter they are shown on Diagram 2. Zone "A" covers dangerous altitudes at low speeds. Failure of the helicopter's two engines, if the flight regime corresponds to zone "A", makes the landing more complicated as the insufficient altitude prevents acceleration of the helicopter to a speed of 120-130 km/h in the autorotation regime.

Zone "B" applies to dangerous high speeds. If the helicopter's two

Fig. 1. A, B — zones; H — height in metres; V — speed



engines fail at a forward speed of more than 120-130 km/h, correct landing becomes difficult. To avoid accidents it is then necessary to pull the stick back quickly to gain an altitude ensuring safe landing. At the same time pilots should be careful not to allow the speed to drop below 120-130 km/h at which the helicopter's rate of descent in the autorotation regime is minimal.

For other types of helicopters the best gliding speed in the autorotation regime constitutes 0.75 of their economical speed.

The force and direction of the wind greatly influence the safety of helicopter flights near the ground in hover regime and at low speeds. The flight manuals define limiting speeds of wind for various directions. Thus, for the majority of helicopters the start and stoppage of the rotor are prohibited at head-on wind speeds exceeding 25 m/sec, and at cross and tail-on wind speeds exceeding 15 m/sec.

At 40-50 m/sec cross-wind speeds the helicopter begins to slip and at a speed of 45-55 m/sec it can overturn. At a hover height of up to 3 m and a head-on wind speed of up to 5 m/sec, the thrust of the Mi-8 helicopter rotor increases by 1,200 kg and more, and at a 20-m height by 600 kg.

The stability of a helicopter hovering near the ground is considerably influenced by the increase or decrease in the steering rotor thrust depending on the wind direction and speed (see Fig. 2). The accom-

panying charts show changes in the power consumption of the steering rotor. It is obvious from the charts that at cross winds it is higher than at head-on winds.

At wind speeds of 10-13 m/sec the steering rotor pitch reaches its maximum and therefore a cross wind with such a speed presents the greatest danger for the helicopter (especially during take-off from and landing on small high-altitude grounds and in a hot climate).

An increase in the power required by the steering rotor with a port wind is caused by the decrease in blade section angles of attack. The angle of attack decreases as the wind speed increases.

The greatest increase of the steering rotor pitch with a starboard wind is observed at wind speeds of 7-10 m/sec, the main reason for this being the vortex ring conditions in which the steering rotor operates.

Cross winds considerably affect helicopter stability during landing and take off (see Fig. 3). If the steering rotor thrust of a helicopter is directed to port relative to the heading (which is characteristic of all Mil helicopters) and the helicopter is hovering with its port side downhill, its minimum slipping stability will be with a starboard wind. This cross wind lowers the slip angle to 5° and increases the overturn angle to 8°.

Entry of hot exhaust gases into engine inlets may also constitute a certain danger in windy weather and at high temperatures of the ambient

air, as they cause a fall in engine power. It has been established that hovering is most dangerous at tail-on winds. In that case the air temperature at the engine inlet may be 20-25°C higher than the ambient air temperature. It must be noted that the automatic control system of the majority of helicopter engines retains constant power to a temperature of 18°C, and therefore a rise in the temperature of the air at the engine inlet results in a drop of power.

Helicopter flights at ground level are often performed in conditions of great air dustiness. This lowers flight safety, especially when flying in formations, due to deterioration of visibility, and adversely affects engine operation. Deep dents and notches appearing on compressor parts increase their erosion, which may result in a surge. Both types of damage lead to premature engine wear.

Experience shows that the dust raised by the induced flow from the rotor gets into the engine at flight speeds below 30-40 km/h. At the same time the amount of dust which enters the engine is lowered to one sixth if the hover height increases from 1 to 9 m. This suggests that helicopter-type take-off and landing and use of 40-50 km/h speeds at an altitude of 6-7 m are the most favourable conditions for helicopter flights.

Consideration of these and other peculiarities will ensure safety of flights at ground level.

Fig. 2. ΔQ — Change of steering rotor pitch; ψ° — Wind angle; W — Wind speed (m/sec)

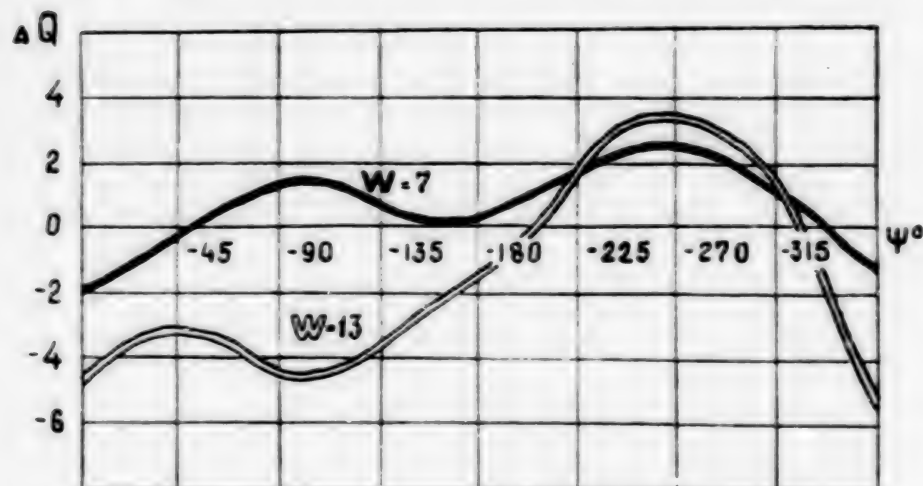
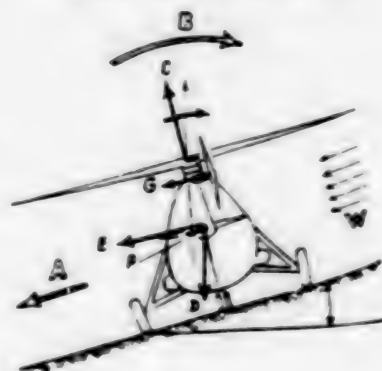


Fig. 3. Helicopter's lateral trim (rear view) on a sloping terrain
 A — Direction of helicopter's slip under influence of forces:
 G — Steering rotor thrust
 P — Weight component
 E — Sail effect of wind force W
 B — Direction of helicopter's overturn at increased rotor thrust C



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GROUND FORCES

MOTORIZED RIFLE UNITS: MOUNTAIN TACTICAL TRAINING

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 17-19

[Article by Col Ye. Chernyshev, under the rubric "Combat Training": "Battle for a Mountain Pass"]

[Text]

The exercise has been going on. The main efforts of the sides were directed at capturing a mountain pass, which was of paramount importance for further developing combat actions. The "enemy" advanced detachment was the first to reach the pass and started to organise defences on a wide frontage. The advanced detachment of the attackers tried to capture the mountain pass on the move. But this attempt failed.

Lieutenant-Colonel V. Denisyuk, commander of the advanced detachment of the attackers, realising that it would be difficult to achieve success by a frontal attack, looked for a new decision. Having studied the terrain on the map and got the air reconnaissance data he found a vulnerable spot in the "enemy" defence. The mountainous terrain restricted the defenders manoeuvrability. They had only one road leading to the mountain pass from the rear. If Denisyuk sent an enveloping detachment and intercepted this road, the "enemy" would be deprived of manoeuvre and the possibility of receiving reinforcements. Then it would be possible by a simultaneous attack from the front and the rear to destroy him and capture the

pass. The intricacy of carrying out this concept consisted in the fact that it was difficult to determine the march route for enveloping detachments. Two roads were indicated on the map. One was comparatively good but led far away from the pass. It would take a long time to reach the planned objective along it. The second road was not so good, but considerably shorter. But it was rather risky to use this road. It ran along gorges and could be impassable for combat equipment. However, Lieutenant-Colonel Denisyuk chose precisely this road. He had already been informed that the road was not held by the "enemy." The "enemy" apparently had not paid much attention to it because he considered it impassable.

The advanced detachment commander decided to take advantage of this. He appointed Captain Nesterov commander of the enveloping detachment and assigned him the mission personally. He explained that the "enemy" was assuming the defensive on the line (see Sketch): Hill 2077 - Hill 2055 - Hill 2063.5 - Mount Kuchudag and simultaneously advancing his main forces from the depth.

The 1st Mts Inf Coy, a mortar Bty, a section of combat engineers and a section of antitank grenade launchers formed the enveloping detachment. Its mission was: to march along the route: Mount Ali-kyan-Hill 1818.7-Hill 1607 - Hill 1430 and by 1400 hrs to capture the gorge west of Hill 1330. By tenacious all-round defence it was to prevent the movement of "enemy" reserve to the mountain pass and to cover the advance of the 1st Mts Inf Coy to the rear of the subunits in defence.

The initial point — Mount Ali-kyan — was to be passed at 1200 hrs. There were no neighbours to the right or left.

Captain Nesterov, commander of the enveloping detachment specified the mission, estimated the situation and took a decision. He paid special attention to studying the route of movement on the map. Having called the commanders he explained the situation to them in detail and assigned the mission, which came to performing a march, capturing a sector of the main road leading to the pass, and stopping "enemy" movement along this road.

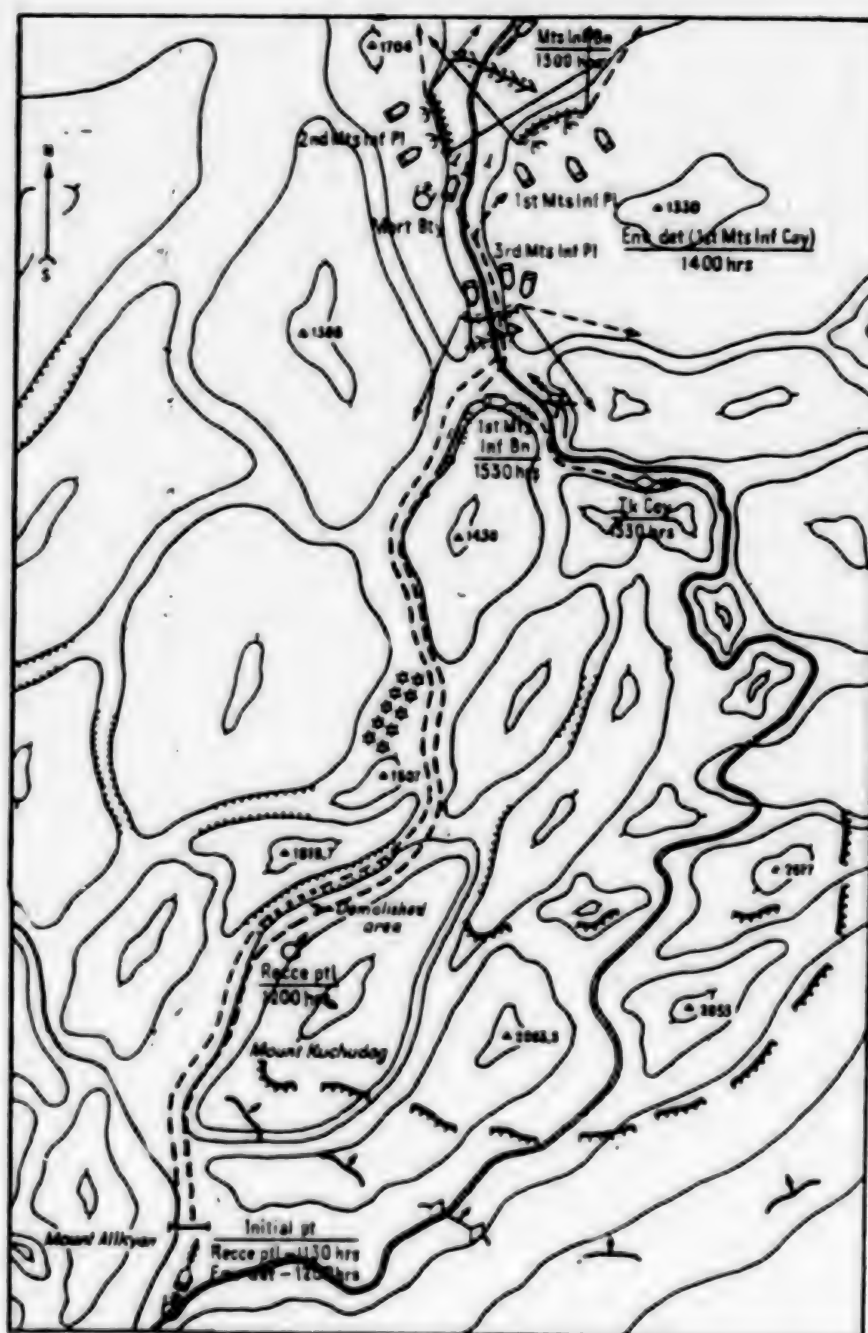
The 1st Mts Inf Pl with a section of combat engineers formed the reconnaissance patrol and was to reconnoitre the route of movement, paying particular attention to the sector of the road east of Hill 1818.7. After reaching the assigned area it was to take over the defence of the strong point: western slopes of Hill 1330-eastern slopes of Hill 1386-northern slopes of Hill 1430. It was to pass the initial point at 1130 hrs.

After checking readiness for action the captain gave the command to advance.

Meanwhile the 1st Mts Inf Bn CO assigned combat missions to the subunits. They came to the following: after successful actions by the enveloping detachment (1st Mts Inf Coy), to advance along its route to the rear of the defenders and simultaneously with other subunits of the regiment to attack the "enemy" and capture the pass.

A reconnaissance patrol under Senior Lieutenant N. Titov, advanced along a rocky mountainous road. A patrol vehicle moved in advance. The entire personnel carried out observation. Soon the patrol vehicle commander reported that the road was blocked by a landslide. The senior lieutenant examined the obstacle and came to the conclusion that if the entire enveloping detachment's personnel worked intensively the road could be restored in an hour. Having reported this to the company commander he organised the work. Meanwhile the combat engineers neutralised mines. Three recon men on foot continued reconnaissance with the mission to advance along the route unnoticed, to define the passability of the road and to ensure the reconnaissance patrol against a surprise "enemy" attack.

Soon the main forces of the enveloping detachment arrived. Work was in full swing. The road was broadened and strengthened. If



the enveloping detachment was successful, the entire battalion would follow this route.

Having restored the road, the enveloping detachment continued the march and by 1400 hrs reached the assigned point.

Here, on the terrain, Captain Nesterov, specified combat missions for the subunit commanders. The detachment assumed the defensive. The road was mined and blocked with slashings to the north and south. The detachments prepared the fire system, camouflaged combat equipment and intensified observation.

Lieutenant-Colonel Denisjuk, being informed by the commander of the enveloping detachment that the mission had been fulfilled, ordered the 1st Mts Inf Bn with a Tk Coy to cut into the "enemy" rear along the route of the enveloping detachment and to attack the defenders.

The roar of engines broke the mountain silence. The "enemy" battalion hastened to the pass. Its commander was rather puzzled when he saw slashings which could not be bypassed because of the terrain. This caused disarray among the "enemy." Captain Nesterov took advantage of this and gave the order to open fire. Shots rang out. This time blank cartridges were used. But if it had been a real battle one could have easily imagined the enemy column destroyed, his fighting vehicles and personnel carriers burning and the road blocked up with damaged combat equipment.

Only now did the "enemy" understand the concept of the attackers. He hastily sent a tank company to destroy the enveloping detachment.

The enveloping detachment found itself surrounded. An "enemy" motorised infantry battalion was advancing from the north and his tank company from the south. The detachment was attacked by helicopters. Success depended to a great extent on the ability of the commander of the 1st Mts Inf Coy to control the subunits and fire in battle. At the command post of the superior commander the actions of both sides were thoroughly observed and the commands given by Captain Nesterov over the radio were attentively listened to.

The "enemy" motorised infantry battalion having sustained losses and been unable to overcome the enveloping detachment's defences on the move, started planned preparation for a new attack. It redeployed its forces, brought up artillery and positioned it for direct fire. The tank company, approaching from the side of the pass under cover, was deployed and prepared for a fresh attack.

The position of the enveloping detachment became very serious. With fire from the mortar battery Captain Nesterov prevented the "enemy" from removing the slashings. A section of antitank grenade launchers changed its fire positions. Motorised infantry men and AA gunners fired at the air "enemy." The situation becoming so complicated, Captain Nesterov reported it

to the regimental commander. Soon helicopters appeared and provided sufficient fire support for the battalion.

Thus time was gained. The 1st Mts Inf Bn reinforced with a Tk Coy approached by the route laid by the enveloping detachment. Having routed the "enemy" tank company the battalion reached the main road and, without any delay, began to advance for the attack from the rear. Helicopters secured fire support for the battalion.

The "enemy," attacked from the front and rear, was unable to hold the mountain pass.

At the critique the exercise director commended the initiative of the enveloping detachment commander, his foresight and his efficiency. At the same time he noted shortcomings of the defenders, who had underestimated the importance of roads in mountains.

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GROUND FORCES

MOTORIZED RIFLE UNITS: TACTICAL TRAINING

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 20-21

[Article by Lt Col A. Chulanov, under the rubric "Combat Training": "Unexpected Manoeuvre"]

[Text]

Only the commander who is more resourceful, courageous and resolute will win victory on the battlefield. The following is a significant example. In the foot-hills of the Caucasus during the Great Patriotic War a rifle company was to capture a dominating height strongly fortified by the nazis, who kept all paths and depressions under mortar and machine-gun fire.

Several attacks carried out by our forces failed. However, the company commander found a clever way out of the situation. He noticed that at dawn mist slowly rose from the foot of the height to the top. He decided to take advantage of this for camouflaging the attacking fighting men. Three groups now launched an attack, one group delivering a blow from the front and the other two from the flanks. The enveloping groups were the first to open fire to draw enemy attention onto themselves, while the striking group under the cover of the mist noiselessly approached the hitlerites and appeared like ghosts before them. The blow was so unexpected that the nazis could not offer much resistance and were routed.

Frequently a situation may arise in battle when subunits find themselves

in a critical situation. There too only the commander who is tactically competent, capable of using some method or manoeuvre new and unexpected for the enemy will rise to the occasion. This is what happened at a tactical exercise.

The 1st Mts Inf Bn under Captain Donskoi, reinforced with a Tk Coy, an Arty Bn, a Mort Bty, an engineer Pl and a Pl of ZSU-23-4 guns was operating in the vanguard of the regiment. It was to capture Hills 207.5 and 209.2 and to cover the deployment and orderly committal to battle of the unit's main forces. The situation by 0900 hrs was as follows (see Sketch).

A patrol section, having reached the northern slopes of Hill 203.8 came under fire of the "enemy" deployed on Hill 209.2 while an advance post was fired on by an "enemy" artillery battery from Uz-kaya Wood. Meanwhile the commander of the advance post noticed that an enemy force up to a company strong with tanks was already in prebattle formation and was moving towards him.

Having reported the situation to Senior Lieutenant Fyodorov, commander of the 1st Coy, which was

acting as an advance party, he immediately withdrew his platoon (the platoon had lost an IFV) to the western edge of Gustaya Wood.

The advance party commander, realising that the "enemy" had forestalled him in deployment, decided to assume the defensive on the northern slopes of Bezmyannaya Hill and to secure entering battle for the main forces of the advance guard. He informed the battalion CO who, hearing the firing, began to advance towards the 1st Coy.

At 0920 hrs on arrival at Hill Bezmyannaya he established from the report of the advance party commander and personal observation that up to a company of the "enemy" had begun to deploy in the direction of Hill 207.5 while up to an artillery battalion was taking up fire positions behind its northern slopes. In the area of Maly farmstead a dust cloud was observed. Having quickly estimated the situation the battalion CO approved the decision of the 1st Mts Inf Coy commander and ordered him not to allow an "enemy" breakthrough along

the roads and to be ready to attack in the direction of Bezmyannaya Hill — Hill 209.2. The artillery battalion was to take up fire positions south-east of Gustaya Wood and to interdict the "enemy" advance in the direction of Hill 207.5-Bezmyannaya Hill.

After that he gave instructions to the battalion chief of staff: "Direction of movement — eastern edge of Gustaya Wood, eastern slopes of Dlinnaya Hill. Speed — maximum, distance between vehicles up to 100 m." It was not fortuitous that the commander ordered the distance to be increased.

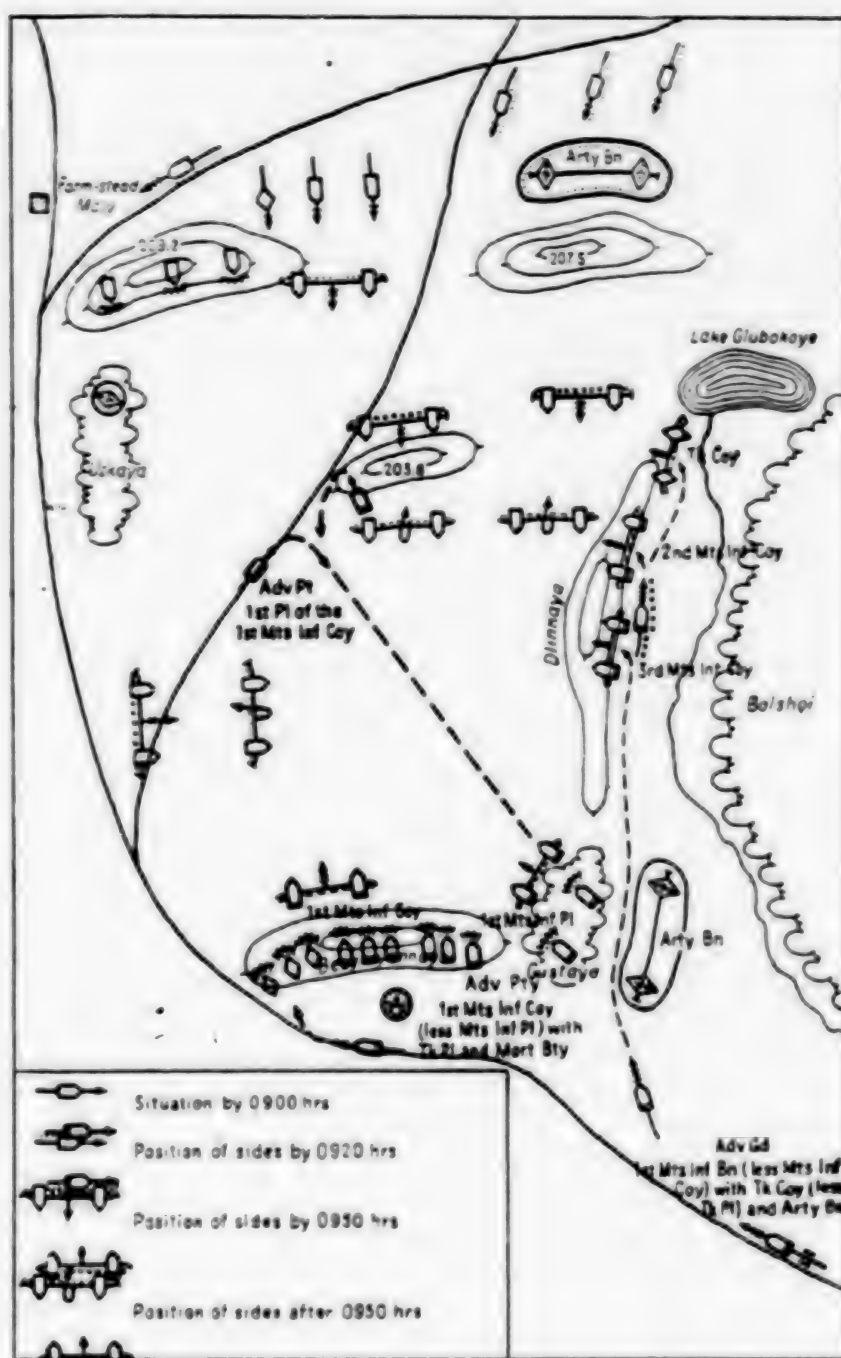
At 0950 hrs the head column of the battalion reached the northern slopes of Dlinnaya Hill. A command was given over the radio following which all vehicles simultaneously deployed to the left and immediately assumed battle order. Without any delay they rapidly approached the western slopes and opened concentrated fire at the "enemy." His left-flank company began hastily to withdraw to Hill 207.5 under direct fire, while the central company made an attempt to form the front to the left. His battle formation was confused. The enveloping "enemy" company came under artillery and mortar fire and could not help the main forces. Meanwhile the 1st Mt Inf Coy also launched an attack. The battalion rapidly attacked the "enemy" from the flank and the front and completed his rout.

The battalion CO ordered pursuit to be begun and heights 207.5, 209.2 to be captured and the defensive to be assumed there to repulse attacks of the approaching large "enemy" reserves.

The battalion successfully carried out the assigned mission though the beginning of the meeting engagement was not favourable for this.

What in the final analysis brought success?

First of all the originality of the commander's decision based on surprise.



"Before the battalion's frontage," the battalion CO reflected, while estimating the situation, "there are two reinforced companies, probably a part of the advance guard. Its likely strength is a reinforced battalion. Consequently one can expect an enveloping column up to a company strong.

As the "enemy" has forestalled the battalion in deploying and capturing of an advantageous line it would not be to the battalion's advantage to advance along the road and deploy for battle right of Uzkaya Wood; this would result in a frontal encounter with the forces of the opposing side, which had already

deployed for battle. Besides, that was precisely what the "enemy" probably expected, for at first sight there was no other way out. He reasoned in the following way: "The battalion will probably not bypass in the direction of Uzkeys Wood because it would encounter the enveloping company and would be deprived of freedom of actions."

"As to the manoeuvre in the direction of Dlinnaya Hill the terrain there does not make it possible to deploy and assure battle order. Meanwhile the battalion will try to capture Hills 207.5 and 209.2 at any cost, because they are advantageous lines for the approaching main forces to join battle."

Having weighed all this, the battalion CO correctly guessed the "enemy's" intentions to deliver a blow with the main forces from the front and to attack with one company on the flank.

Considering his unfavourable position the battalion CO would have to use a manoeuvre unexpected for the "enemy" in order to win.

Having achieved superiority on the right flank (where the "enemy" least of all expected it) the battalion CO decided to rout him by a

surprise attack. He decided to re-deploy the advance guard not as usual (first into company, then into platoon columns and finally in line formation) but to approach the "enemy" under cover of Gustaya Wood and Dlinnaya Hill and deploy into battle formation immediately from battalion columns with a simultaneous turn of all vehicles to the left, later on striking via Dlinnaya Hill at the "enemy" flank.

We already know what happened after that.

Captain Donskoi knew that success in a meeting engagement is achieved mainly by skilled manoeuvre and quick, resolute actions of subunits. Besides he made skilful use of the terrain. Availing itself of the accidents of the terrain the battalion reached the flank unnoticed. The attack was a complete surprise for the "enemy."

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CSO: 1812/40

NAVAL FORCES

DISCUSSION OF U.S./NATO NAVAL ARTILLERY EMPLOYMENT

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 27-29

[Article by Captain 1st Rank S. Litvinov: "Naval Artillery"]

[Text]

The advent and development of nuclear-missile weapons after the Second World War led to underestimation of the role and significance of naval artillery (NA) in modern combat and the specific character of its tasks. The most instructive illustration of this standpoint is the US Navy. Its fighting ships commissioned in the 1950s had no artillery armament at all. Besides, artillery weapons were removed from a number of ships in the process of their refitting. During modification of cruisers their NA was completely dismantled and replaced by SAM (surface to air) systems.

But experience shows that in modern war at sea NA far from having lost its significance may under certain circumstances even compete with missiles and aviation in accomplishing certain operational and tactical missions. Experts point out the following main advantages of NA: high degree of readiness for combat; ability to deal a retaliatory blow quickly and to be used continuously and for long periods of time in any weather conditions; higher antijamming capability as compared to missiles; high rate of fire and great ammunition establishment providing continuity of prolonged firing, which is especially important in repulsing attacks of low-flying air and high speed surface targets, and the possibility to engage the enemy many times; lower cost of artillery armament as compared to expensive missiles; high kill probability.

Ground objects acquire ever greater significance in operations of sea powers' navies, for nowadays their missions include also fire support of land forces from the sea, cooperation of naval

forces with land troops in landing operations and repulsing enemy landings, and engagements with enemy ships in coastal zones adjoining areas where land forces are operating.

During the Vietnam war the Americans made wide use of ships with mainly artillery armament for fire support of their troops operating along the coast and for bombarding islands. The US naval forces included mobile naval gunfire groups comprising 1-3 cruisers and up to 5 destroyers. For instance, the bombardment of Haiphong in May 1972 was carried out from a distance of 16-18 km by ships moving at a speed of up to 30 knots. Artillery attacks were short — 5-10 min each. Target designation data were supplied to the ships by aviation. For fire adjustment use was made of special posts stationed on planes, helicopters, ships and on the shore. To destroy one coastal target required 15-23 shells (for field artillery this figure was 50-60).

Such a strong "coastal" trend in combat operations of naval forces caused changes in the operational and tactical training of US Navy vessels: surface ships began to work up artillery attacks on different area and pin-point shore targets.

NATO military leaders consider amphibious operations, which can be subdivided according to their nature into tactical, operational and strategic depending on the missions and the composition of forces, as a special type of joint army-navy offensive operations. Combat landing operations and recent naval exercises convincingly proved the necessity for efficient naval gunfire support of landing forces to neutralise and destroy shore

Based on foreign press reports.

installations and troop groupings on the beach-head to a distance of up to 20 km from the shore. The norms of fire support of landing forces are as follows: assault of a marine battalion—fire of four-six 127-mm guns; assault of a regiment — nine 203-mm and sixteen 127-mm guns; assault of a division — eight-nine 354-mm or 406-mm guns.

During the war in Vietnam the US Navy used also fast gunboats equipped with 40-mm and 76-mm guns.

In almost all the local wars waged by the Western states in the 1960-70s NA was extensively used to carry out traditional tasks of a surface force in maritime theatres of operation. Their operations showed that ships provided with artillery armament are unrivalled for neutralising enemy fire weapons in a coastal zone.

Several years ago the USA began work on designing a fire-support ship. Its main armament includes 3 or 4 203-mm long-range single guns and 2 or 4 127-mm twin multipurpose guns. Construction has begun of multipurpose fire-support ships armed with 175-mm single-barrel turret guns designed to fire shells provided with rocket boosters. The artillery armament of destroyers and torpedo boats includes two 127-mm guns. According to the press in the USA work is also carried out to create a modified 127-mm gun model. In Great Britain a destroyer of a new design with a 114-mm fully-automatic gun has been commissioned. Development of new NA models is also under way in Italy, France, Sweden and other countries.

In modern guns the feeding of shells from the ammunition room to the guns, loading, aiming and opening fire are fully automatised. Fire is controlled as a rule by one operator. Different fire control systems are used. These systems widely employ the latest achievements in electronic and computer engineering, which makes it possible to considerably increase the accuracy of fire and reduce the time required to prepare the gun for firing, the overall dimensions and mass of fire control instruments. Infrared and TV target tracking facilities, analogue and digital computers and laser rangefinders are also extensively used in foreign systems. Small-calibre AA artillery systems are being equipped with portable sighting stations located directly on the gun. They provide self-cont-

ained aimed fire using their own computers and target searching and tracking facilities.

In the last decade the scope of work for developing qualitatively new types of ammunition for NA (rocket projectiles for 127-mm and 203-mm guns) has been greatly extended in the West. New 203-mm projectiles with a laser guidance system have been tested. A similar projectile for the 127-mm gun and also projectile liquid ammunition charges are being developed. It is assumed that they will greatly increase the damage radius. Work is under way now on the development of guns for new 254-mm and 330-mm rocket projectiles. Taking into consideration the low weight of small-calibre AA shells and in an endeavour to increase their ability to penetrate the armour of air attack weapons (AAW) it is planned to put into service special anti-AAW armour-piercing projectiles provided with a uranium core.

The study and analysis of NATO ships' operations in local wars showed that naval SAM systems are far from being all-powerful for repulsing the attacks of modern AAW throughout the possible altitude range. It is considered that one of the means that can effectively reinforce a ship's air defence system against low-flying targets is 114-127-mm, and especially 20-76-mm NA. It has been established that for calibres 30, 35, 40 and 76-mm the probability of destroying AAW by small-calibre AA artillery (provided the ammunition is ready for firing) at a firing range of 1.8 km within the defensive zone is close to one. These weapons not only effectively supplement SAM systems but in a number of cases constitute their main fire weapons, e. g. in the case of small ships which often have no room for bulky missile systems.

Foreign experts assume that missile systems are more effective at great distances, and NA at medium and short ones.

It must be mentioned that the "shell or missile" problem has lost its former significance. Though nuclear missiles still remain the primary fire weapon of the navy, foreign experts attach much importance in their military programmes to NA, considering it a highly effective means for destroying shore installations, in local wars and landing operations and also for supporting land groupings in maritime theatres of operations.

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NAVAL FORCES

NEED FOR DISCIPLINE STRESSED

Moscow KRSNAYA ZVEZDA in Russian 29 Jul 81 p 2

[Article by Capt 3d Rank A. Remez, commander of the destroyer "Vozbuzhdenny":
"Shipboard Order"]

[Text] "Your subordinates, Comrade Lambotskiy, were late in turning out for physical exercises. And this is not the first time they have violated the plan of the day."

Sr-Lt L. Lambotskiy heard out the executive officer's remark and answered. "That is true. I will look into it." And he added in a low voice: "I'd rather be at sea."

"I'd rather be at sea...." From time to time you hear this phrase from other young officers when the subject of complete and rigorous fulfillment of the requirements of the regulations by each sailor is brought up.

True, different people invest different meanings in the phrase. Some assume that, when at sea and engaged in a difficult and important matter, people tighten themselves up. And if that is the case, an officer can relax his efforts at educational work without any special harm.

Others are of a different opinion--on going to sea the observance of some kinds of rules in the regulations for all sailors cease to be an urgent necessity, since at sea, they say, they are in no mood for trifles. The main thing is that the weapons and equipment operate reliably and the rest will follow.

The polarity of these two conclusions is only apparent. Both of them are deeply mistaken in their essence. Firm order and precise organization of the service are among the decisive prerequisites for successful fulfillment of combat training tasks in the oceans, and, in particular, they are the basis for creating in the crew that psychological attitude without which it is difficult to achieve a high tone in training.

But precise order aboard ship cannot either be born by itself or be automatically self-sustaining. Constant, strenuous, purposeful work is needed. And in the sailing environment, volition, exactingness and the teaching art of each officer mean a great deal. It is on an extended cruise that his training as an educator is subjected to a comprehensive test.

shortly after the executive officer's conversation with Lambotskiy that was mentioned above, our ship left its home base. Several days of sailing passed, and reports began to come to me that in the subunit that Sr-Lt Lambotskiy commanded the servicing of the equipment was deteriorating. As an inspection indicated, the reduction in the quality of servicing of the equipment was the result of insufficiently strong discipline. Some seamen, who at first were late for physical exercises, inevitably had a negligent attitude toward tidyness, and they began to carry it over to nonperformance and carelessness in servicing the equipment. The officer who presumed that everything gets done by itself at sea was entirely enfeebled and closed his eyes to "trifles," and he himself did not serve as an example in the observance, let's say, of the plan for the day.

A severe and detailed talk in which members of the party bureau participated, was held with Lambotskiy. We analyzed his work style comprehensively and planned measures for assistance. The young officer drew the correct conclusions. He raised his exactingness toward himself and his subordinates and began to check more strictly adherence to the order of the day and quality in the conduct of the underway watch. The educational work in the subunit became more animated. Things then went on much better here.

Anyone who has been on an extended cruise knows well how heavily the sailors there are loaded with work and the physical and psychological tension they experience, especially during storms. Mechanisms, assemblies and systems are in operation for weeks. Underway watch is performed around the clock, requiring special attention and high vigilance. At times it becomes necessary to perform preventive repair. And, naturally, exercises, drills and firings are conducted.

It happens that some shortsighted commanders, making reference to excessive busyness of the sailors, postpone such measures as reviews and inspections, making the rounds of the ship, checking on observance of the plan for the day, which are required by regulations, until return to the base. The educational role of the commander's monitoring is thereby reduced.

We hold to a firm rule from the first miles of sailing: everything that is called for by the regulations, instructions, and the ship's orders should be carried out under all conditions, without fail. We conduct reviews and inspections and drills in study of the regulations, and later we administer tests, strictly according to the schedule. Ceremonies are observed without fail. Reviews, which include also an inspection of military bearing, tightens up the sailors and teaches the rules of military courtesy. Ceremonies far from home shores stimulate in the sailors a special emotional uplift, a striving to carry out their military duty still better.

Maintenance of precise order when a ship is on a cruise presupposes not only high exactingness by the commander but also constant work on the creation of suitable living conditions and the amenities for the crew. We are talking about supplying the sailors uninterruptedly with objects of material satisfaction, about a diverse menu, and, with climatic conditions taken into account, about leisure-time that has been organized in interesting fashion. Tireless attention by the officers and the party organization toward details of the ship's order helps not only to reveal various violations quickly but also, simultaneously, to eliminate their causes.

Here is a typical example. During a cruise in southern latitudes, the watch personnel at one of the upper posts received reprimands several times in succession

during night checks. Why? The cause proved to be simple. The so-called tropical type of clothing that was announced on the ship. By day it contributed no little to the sailors' relief. But at night, watch personnel became cold and their attention was reduced. A correction was made for the temperature, and the watches dressed more warmly at night--it was as if the reprimands had never happened.

During an extended cruise there is also a definite peculiarity in disciplinary practice. As experience has indicated, penalties have to be imposed very rarely during a voyage. At times it is sufficient to remove the guilty party from duty, to give a strict evaluation of his faults, and the sailor, as they say, is ready to drop through the deck, if only to avoid the reproachful glances of his comrades. A reproof for carelessness on an ocean voyage strikes especially closely to the heart, for each sailor daily and hourly senses his direct participation in supporting the reliability of sailing and in accomplishing the mission successfully.

A kind word and praise in any circumstance do not leave one indifferent. But in sailing the mobilizing force of encouragement is especially felt. The moral stimulus incites an uplift of energy, a striving to act still better. I know from personal experience what great value official documents for successes in military work at the various stages of sailing have for the sailors, for example, documents with the words: "Place of award--Pacific Ocean. Longitude....Latitude...." Such inscriptions remind the sailors of rigorous experiences.

During a recent extended cruise the crew of each ship had to operate under different climatic conditions. And the missions they accomplished were distinguished by high complexity and required great strenuousness in the sailors' mental and physical efforts. Under such situations some people can have psychological setbacks and increased nervousness, which tells rapidly on the climate of morale within the collective.

And if we are able to avoid such cases, then no small credit for this goes to the ship's party bureau. In particular, the party bureau reacts in good time to various errors of the communists. One of the officers, let's say, has committed, a crudeness in the treatment of subordinates--right away a detailed party discussion is held. Department commander Sr-Lt A. Beskrovnyy had delegated conduct of the missile-artillery duty to the petty officers and abandoned his personal monitoring at one stage of the cruise--without delay the party bureau's appropriate reaction followed.

It is precisely the communists who set the tone for socialist competition. In this case, in accordance with the motto, "For high combat readiness and a firm military procedure!" the sailors are competing not only for excellent sailors' training but also for model appearance and observance of ethical norms of conduct. The bases for success have been laid in an organic combining of training and education. In particular, the torpedo department, which Sr-Lt N. Pleshkov commands, more often than not has emerged as competition winner on our ship. And this is consistent: strong military discipline lies at the basis of steady training successes here.

...An officers' competition is going on in the wardroom. Sr-Lt L. Lambotskiy, whose subordinates distinguished themselves during a routine ship exercise, takes the floor. Speaking about the sources of success, he recalls the initial cruise, which was unfortunate for him, but he wholeheartedly thanked his senior comrades for the fact that they had taught him how to maintain firm ship's order in the subunit.

NAVAL FORCES

COMPUTER AIDED COMBAT CONTROL

Moscow KRASNAYA ZVEZDA in Russian 18 Aug 81 p 2

[Article by Vice-Adm M. Iskanderov, first deputy chief of staff of the KSF [Red Banner Northern Fleet] and candidate of military sciences: "The Commander and the Computer"]

[Text] One of the tensest and most dramatic forms of confrontation--the search by a group of surface ships for a submarine--appears in one way to be very humdrum, it can be said, even peaceful. Many hours can pass during the monotonous, tiring search operation, before one of the parties uses a weapon decisively, and often unexpectedly.

In principle, the general scheme or subject of the battle of a surface ship with a submarine has remained unchanged over the decades: obtaining a target designation from the searchers, proceeding to the area of the "enemy's" possible position, searching, observing and striking. However, modern weaponry and combat equipment have, with their astonishing capabilities, raised immeasurably the complexity of the confrontation of the two sides. And the essence of this complexity consists mainly in the fact that the commander has in his hands many delicate and complicated tools (without which victory is impossible nowadays) for waging the battle, whose effectiveness becomes reality only when the commander, relying upon the training of his subordinates, controls everything to perfection and is able to combine them to perfection.

An analysis of training battles graphically confirms this. Primarily the weaker side, it would seem, wins the victory unexpectedly. Here is one such example. A large antisubmarine warfare ship, which, in the given specific situation, does not have any special chances for success, launches a search for a nuclear-powered submarine--a ship which is strong in the highest degree from the equipment point of view. But this, so to speak, is on the basis of arithmetic estimates. And for forecasting the progress and outcome of the battle, arithmetic is not enough. Capt 3d Rank L. Khorychev, commander of the BPK [large antisubmarine warfare ship], confirms this. He took advantage of the submarine commander's tactical passivity and, having been able to get everything possible out of his own ship, won the decisive battle. During the critique the submarine commander was subjected to criticism primarily for an oversight in controlling the ship and for lack of skill in using the potential capabilities of his armament, particularly his electronic equipment, in full measure.

Not everyone knows beforehand, sometimes not even the designers themselves, just what the potential capabilities are of combat equipment. I became convinced of this for the first time from my own experience of many years ago, when I was in charge of a department of a submarine. At that time there appeared the first torpedo data computer (TAS)--an electromechanical device that greatly facilitated the work of the commander and navigator of the ship when going to a torpedo attack. That was the programmed purpose of these instruments. But somehow the thought entered my mind that under certain circumstances, especially in case of frequent changes in course and speed of a submarine, the TAS can be used for navigational purposes to increase precision in sailing the ship. The first experiments gave excellent results. Soon the new capabilities for the torpedo data computer began to be used widely on all ships.

Today the question of the trial use of the whole equipment, especially of the electronic computing equipment, which facilitates the commander's work, is primarily the most important part of the problem of controlling a ship on a cruise or in battle. The amount of information coming to the commander in modern battle is so great, the flow of it is so dense and diverse, and the time for processing it is so short, that it cannot be coped with without electronic computing machines, or, as they are frequently called, "computers." The computer is an extremely important component of the "man-equipment" system. It is all the more important that the commander see correctly the place of this equipment in the referenced system and relate himself correctly to the computer.

We have at times encountered the unambiguous expression: the computer is an adviser. It is hardly possible to concur with this argument. Just as ordinary reports, let's say, cannot be advisers, so the most modern electronic computers are not suitable for this role. They do not have an active stance. In the "commander-computer" system, only the commander is active. The electronic equipment serves him in the way that he is able to use it for his own purposes. In other words, the computer is only a means for combat control.

Unfortunately, for this reason, fallacies of a dual nature exist among commanders. For some, the complexity of modern equipment and the delicacy of its use become a unique psychological barrier, and, in the final analysis, they begin to disregard it. At least its qualities and potential. These commanders are not in a position to get accustomed to the specifics of control in modern battle.

The fleet's equipment is being updated constantly. The modern ship, created by the genius of scientists and designers, is becoming a real menacing force in the hands of creatively thoughtful commanders who have initiative and energy, who are able to grow rapidly in tactical and technical matters, and who constantly improve their combat-morale qualities.

The new missile cruiser "Kirov" is in operation in our fleet--the embodiment of the modern level of domestic shipbuilding. Its crew is led by an officer who previously commanded an ordinary large antisubmarine-warfare ship. But the merit of the commander of the ship was precisely that he quickly managed not only to learn the construction of the new ship but also to penetrate into the depths of those new possibilities which the modern cruiser opens up for him as a system of weaponry and a system of control.

This is very important--it is natural to adopt new equipment and right away to view it "from above," from the commander's heights, which cannot be supplanted by any kind of "authority" of the technical equipment that has been entrusted to him. Otherwise, another fallacy arises, another extreme--the commander falls into dependence upon the equipment.

Once we had to inspect the tactical training of the commander of one of the modern submarines. He went on a torpedo attack on a modern simulator complex. An excellent computer was "working" for the commander, one controlled directly by a computer officer. But, unfortunately, the commander did not manage to deal correctly with the remarkable means of combat control. And only because of the fact that he had trusted the machine. When the question arose of why he had committed an error, the officer answered: "This machine gave me these figures. That is what determined my position." Yes, the machine can in the shortest of times produce extremely complicated and labor-intensive computations and issue specific data, but it is of little value if it has not been thought out competently and critically by the commander. The commander can make a decision based upon the computer's recommendation, but he is free to completely disregard these recommendations or to consider them partially if his own analysis of the tactical situation and the conclusions of the ship's combat team encourage him to do so.

Yes, the modern commander needs to know how to handle any computer. And for this he needs to study and, above all, to arm himself with a modern, truly scientific approach to the problems of control that arise. It is recognized that it gives tone to a flag officer's work. The leading role in the practical mastery of the new equipment by ship commanders and crews goes precisely to those who have the automated control systems and other electronic equipment at their disposal and who have gained experience in their use in the interests of the effective control of forces. It is pertinent here to recall the well-known requirement of the 26th CPSU Congress: production activity should be vitally interested in mastering more quickly and in better fashion the fruits of the thought and of the labor of scientists and designers.

When speaking about control systems, I would like especially to note the role of staffs. Modern equipment, above all electronic equipment, is so complex that scientific justification is often required for the methodology for mastering it. Gathering the results of practical experience, analyzing it, generating recommendations and checking them, and disseminating them throughout the forces, are within the capabilities only of the staff.

In order to perfect solid skills on the part of commanders in operating with electronic computer equipment and skills in making maximum use of its potential, the appropriate conditions must be created during combat training. And this, again, depends greatly upon flag officers and staffs. Commanders require computers because of the complexity of the tactical situation of modern battle. But if such conditions are not created during combat training, then the requirements simply will not arise for the commander to make more complete use of the equipment available aboard his ship.

As experience indicates, an officer needs to understand the essence and the specifics of the "commander-computer" system in order to prepare him, prior to his being named to the post of commander of a ship. That is, it is necessary to prepare him previously and thoroughly for questions of the use of modern means of control.

First, in schools, then, more single-mindedly, in commanders' classes, and, finally and most purposefully, in an academy. And not just theoretically but also practically arming the officer with firm habits in the use of electronic computing equipment for tactical purposes.

It is somewhat unusual, perhaps, to speak of the proximity of these concepts--tactical missions and electronic computers. But one must not forget that the tactical operations of some ships, let's say a nuclear-powered missile carrier, can yield strategic consequences. Moreover, the commander should be ready to be deeply cognizant internally of the entire measure of his responsibility for effectiveness in the use of the powerful weaponry placed in his hands. This is one of the most important areas in the educational work by flag officers, political organs, and staffs with ship commanders. And it is necessary here not only to call upon commanders for a modern form of thought and actions in controlling the ship but also, indeed, to make it possible to work on these questions properly.

Unfortunately, certain senior chiefs do not have the skill to rationally organize the work of ship commanders. The time of commanders is sometimes spent on all kinds of general measures: assemblies, conferences and meetings. At times it is not considered disgraceful to divert a ship commander's attention to secondary and tertiary matters, to rain down on him a stream of low-valued information. That is, it is forgotten that today's ship commander of today is primarily a tactician, an organizer of battle, and, in a certain sense, a scientific experimenter, and, therefore, he should expend the main share of his time and attention on work on this plane.

There is no officer, according to Ship Regulations, who has a greater responsibility than the commander of a ship. Fifty-seven articles are devoted to enumerating them. But the first and foremost of his obligations is: "to know to perfection his ship, its tactical and technical data, and to know how to control the ship and to use correctly its combat and technical equipment." The interrelationships of the commander and the computer are, perhaps, one of the most complicated problems that ensue right now from the provisions of the Ship Regulations that have been cited. Here especially is the pulse of time being heard, and the commander must be distinctly cognizant of this.

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NAVAL FORCES

COMMUNICATION WITH SHIPS ON EXTENDED CRUISES

Moscow KRSNAYA ZVEZDA in Russian 24 Sep 81 p 2

[Article by Engr-Vice-Adm A. Morev, chief of communications of the Red Banner Pacific-Ocean Fleet: "Communications at Sea"]

[Test] The large landing ship "Ivan Rogov" was on an extended ocean cruise. Once, an analysis of the weather showed that the ship was threatened by an encounter with a tropical storm. A change of course was required--the radiomen of the fleet's staff transmitted--and the communications specialists of the "Ivan Rogov" accurately received the recommendation. The ship's commander, on considering the situation, adopted an optimal decision.

Such episodes are routine in the fleet. Radio communications, the electronic nerves of the complex fleet organism, reliably serves the diverse requirements of command and the exchange of information between the shore and the ocean and among the various branches of the fleet, which operate at vast distances from bases and airfields, on the surface of the sea, under water, and in the air. We emphasize, in these cases, reliably--when there is a comprehensive approach to the organization of communications and when there are no weak links in the chain.

Among the best ship subunits for a number of years has been the communications department (BCh-4 [Department No 4]) of the cruiser "Admiral Senyavin." In 1978, when CPSU Central Committee General Secretary and Supreme Soviet Presidium Chairman Comrade L. I. Brezhnev visited the ship, the communications specialists coped excellently with a specially important and complicated task: to provide communications during the period of the exercises. It is customary to point out that the "Senyavin's" communicators, who were under Capt 3d Rank V. Shalyayev, are today confidently leading in the socialist competition for high combat readiness and firm military order. Radio communications "the 'Senyavin' way" is the way such military communications should be: always reliable, secure when the situation requires it, and, in all cases, responsive.

Let us look in more detail into how Capt 3d Rank V. Shalyayev solves combat training tasks with high quality.

In the first place, through constant attention to the training of his subordinates, a rise in which is provided by all forms of instruction for the specialty and by intensive exercises. In other subunits, difficulty is experienced after departure of the very best specialists for the reserves. On this cruiser, matters have been

so arranged that the experience of the best specialists in the reserves, is, figuratively speaking, not discarded.

In the second place, the cruiser's communications equipment is always maintained in good working order, the regulation servicing is done on time and conscientiously, and minor irregularities are eliminated immediately upon detection. All this taken together can support such high technical sophistication.

And, finally, in the third place. When the people have been trained and the equipment operates smoothly in the regimes stipulated for it, definite psychological-organizational prerequisites for combat work are required for success. Most important of them are the state of discipline of the watch's radio operators, their knowledge of the regulations and other directive documents, observance of the requirements of these documents, and high vigilance on duty at the combat post.

As is clear from what has been said, the commander of BCh-4 is required also to be a thoughtful engineer, an energetic organizer and a skilled educator. And, without fail, to take to heart the matter charged to him, to show initiative, and to be able to evaluate exactly the state of affairs in the department from a party point of view. Without initiative and responsibility, and a love for the job, it will be difficult for the officer to serve--and it will be difficult to serve with such officers.

On the missile cruiser N, Sr-Lt S. Belonogov commands the communications department. Young, full of energy, educated, and assigned to one of the key prestigious posts, it would seem that the officer would exert all his effort to live up to the trust placed in him. But then a check was made of how the department was prepared to perform its tasks on an extended ocean cruise, and it turned out that all of Belonogov's hopes and reliance are based on outside help. Someone should tune up the apparatus for which he bears responsibility in accordance with the requirements of the service, someone should be concerned about spare parts and about being furnished with complete documentation, and so on. Well, and what is the officer himself concerned about? Ashore, at his base, obviously, they will help, they will give a hand, they will be compelled to do so, and, finally, they will do it in regulation fashion. And on a cruise? Just as one would expect, the base's exertions and the subunit commander's sluggishness are not slow in showing up when at sea.

And here it is pertinent to turn again to the BDK [large landing ship] "Ivan Rogov," where the Department No 4 commander is Capt 3d Rank V. Parshin. The precision work of the communicators here during ocean sailing proves that they have managed to draw the correct conclusions from the inspection that was held on the eve of the cruise, and they followed strictly the recommendations and instructions of the staff.

There is a completely definite dependence between the work style of the staff and the quality of communications on ships. The morale and political qualities of the staff specialist are no less important than his engineering and technical qualifications. Take staff officer Capt 3d Rank L. Danilov. He canceled his leave in order to organize the preparation of Department No 4 on the ship, which had been designated for a voyage. Was there a necessity for that, and how was this instance to be evaluated? If, in officer Danilov's absence, they had not coped on the ship with the preparations for sailing independently, this "indispensability" would not

have won a kind word. But here it was different. With Danilov not sailing with the ship, and without his knowing the situation in the department down to the slightest detail, his soul, as is said, would not have been at peace. Such a responsible attitude toward the job also yields the corresponding results.

I will note, in contrast, that Sr-Lt Belonogov had copied the sluggishness and dependent attitude from one of the officers of the staff. It appears that it is still necessary to give a thought to whom one should take for a model and just what to borrow from senior persons. It must be supposed that it is not out of place for even a cruiser's commander to reflect on how to correct the work style of the ship's communicator.

One must not forget that the navy's Ship Regulations emphasize the personal responsibility of the commander for the ship's fulfillment of combat tasks and the correct use of weaponry and technical equipment. The regulations place weapons and technical equipment on the same level in unbroken unity. Yet some ship commanders are oriented much more poorly in the use of communications resources than in the use of weaponry. Such narrowness is fraught with erroneous commander's decisions.

The potential of modern communications is great, but it still is not unlimited. Radio communications have to be used in a specific situation, which is extremely changeable in its physical and technical characteristics. Moreover, communications regimes are subject to regulation. A ship commander should know all this, at least enough to understand the specifics of the communicators' work. And here all methods are good for a commander to augment his knowledge--self training, consultation with the flagship specialists, and an analysis of the experience of the best commanders. It is also appropriate to study the experience of the Great Patriotic War. The functions of radio communications since then have grown only in their importance.

In speaking about the reliability of communications fleetwide, one cannot help but note the enormous role of the shore communications specialists. Thanks to their knowledge and hard work, the technically feasible long-range reception and transmission of radio communications are being provided for, the standards for passage of information are being observed, and often they are being overfulfilled. Problems of the long term also are being solved: increasingly complicated equipment is being mastered, the survivability of the systems is being raised, and rationalizers and inventors are improving the technical equipment. Department commanders and engineers are concerned about intensifying the process of training communicators, they are organizing precision work of the duty shifts, and they are mobilizing all the servicemen for achievement of new heights in combat training. Among the right flankers are officers A. Lyubimov, V. Davydov, V. Plotnikov, A. Makrushin and many others.

However, it would be incorrect to consider that fleet specialists have no unsolved questions and bottlenecks. Not everywhere has competition become an active stimulator of combat training, and there are deficiencies in generalizing and introducing advanced experience. Formalism is being hindered, but this most important area of the work is still being simply underestimated.

After extended cruises, the commanders of communications subunits often report that their subordinates have proved themselves well in the best sense under extreme conditions and have made a worthy contribution to fulfillment of the tasks of the ship's crew. And there is a direct dependence between the level of development of

competition in the subunit and the reliability of the underway watch. Indeed, it has been proved that the operator's work is difficult precisely because of psychological tension and because of nerve overloads that are critical at times. Monotonous watches by an operator who does solely receiving, who waits for hours for a message that is intended precisely for him--this is a serious test. And in order that attention may not weaken, a high volitional attitude, the stimulus of conscientiousness and of responsibility to his comrades, and an understanding of the special significance of his watch are needed. In making note of those who have distinguished themselves, unfortunately we do not always scrutinize the specific peculiarities of their experience, including those on the purely psychological plane.

The ship on which Department No 4 is under Capt 3d Rank V. Khorozhikh returned recently from an ocean cruise. The communicators' subunit several times led in the competition within the crew and was awarded a high evaluation for the cruise's results, and the commander was awarded the next military title ahead of schedule. Success was achieved precisely because officer Khorozhikh did not overlook, perhaps, a single essential area in the work with subordinates and technicians. Almost all the officers and seagoing warrant officers here possess high qualifications. The collective is united and disciplined. And our task now consists in studying the advanced officer's experience and introducing it on all ships.

In the final analysis, if we see to it that the standard model of operation becomes the norm for all communicators, that means that there will be no weak spots in the complex system of control and transmission of information.

11409

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NAVAL FORCES

ECONOMY OF PETROLEUM PRODUCTS URGED

Moscow KRASNAYA ZVEZDA in Russian 30 Sep 81 p 2

[Article by Capt 3d Rank V. Shirokov (Red Banner Northern Fleet): "In the Large and the Small"]

[Text] The crew of the large antisubmarine warfare ship (BPK) "Marshal Timoshenko" successfully carried out one combat training task after another on an extended cruise. Then suddenly the Atlantic acted as if it were enraged, and a strong storm broke out. At this time a tactical training task came to the ship: detect and attack an "enemy" submarine within a prescribed sector.

The last fueling had taken place a long time ago, and the ship commander was worried: was there enough fuel on board to carry out the unexpected additional task?

"There is enough fuel!" Engr-Capt 3d Rank N. Vyatkin, commander of the electromechanical department, assured him. "We will operate on what has been saved."

In persistently carrying out the socialist commitments for saving fuel and lubricants that had been adopted for the duration of the extended cruise, the crew of the "Marshal Timoshenko" had been able to save about 1,000 tons of fuel by the time the tactical task arrived, through well thought out planning in the department and a thrifty attitude toward the people's property. The unexpected task was solved with an evaluation of "excellent," without loss of time for bunkering.

The drive to save GSM [fuel and lubricants] is being waged aboard the ship constantly, without rush work or crash work. The final results have been registered in the individual and collective socialist commitments which the servicemen have undertaken for the training year. Specific intermediate goals for savings are set in commitments for each sortie.

At first, this did not go on as precisely as one would wish. Occasional occasions are recalled aboard the ship where various sailors undertook clearly overstated commitments. And the organizational work to fulfill the planned commitments was performed extremely poorly at one time. And here is the result--instead of saving, the servicemen overconsumed fuel, although by an insignificant amount.

The ship's party activists and people's controllers carefully analyzed the causes of the failure. The chairman of the people's control post, Seagoing Warrant Officer V. Novozheyev, and other activists conversed with the sailors who tended the

machinery. It was learned that some of the specialists had violated the operating instructions. A part of the fuel was lost during bunkering, and units, assemblies and systems for ventilation, heating and illumination had not always operated properly. Sometimes the most optimal engine-operating regimes had not been selected during the voyage.

A battle against these and other deficiencies that were discovered was announced. The initiators of the movement to save were the specialists of the electromechanical department. The commander supported their initiative. Now the commitments that are being undertaken are high but they are feasible, and progress in realizing them is being monitored carefully. Aboard ship there is a chart of the contest for savings among departments and specialists who deal with fuel and lubricants. In summing up the results of military training and competition, each time an analysis is made of who made a contribution to the struggle to save and how it was done. A table was compiled, which shows graphically how much fuel the ship consumes under the various underway regimes. One can find out from it what a ton of mazut costs the country. The figures are more convincing than appeals to the servicemen to compete more actively to save each gram of GSM.

During a recent extended cruise, the ship's rationalizers, on the recommendation of Engr-Capt 3d Rank N. Vyatkin, made special containers for collecting spent oils. After appropriate cleaning, the oil is used repeatedly, allowing a substantial portion of expensive lubricating materials to be saved. And other arrangements were introduced on the ship that will enable GSM expenditures to be cut.

The movement to save embraces all ship departments. The experience of the best is promptly generalized and becomes the property of each sailor. And as a result of this--the crew of the large antisubmarine warfare ship, "Marshal Timoshenko" has successfully completed the fulfillment of all the socialist commitments adopted for the training year, and today maintains first place firmly in the chest' [unit] in the competition for savings and 'thriftiness.

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NAVAL FORCES

ECONOMY IN REAR SERVICES STRESSED

Moscow KRASNAYA ZVEZDA in Russian 4 Oct 81 p 2

[Article by Vice-Adm P. Belous, deputy commander for logistics of the Twice Red Banner Baltic Fleet and Chief of Logistics of the DABF [Twice Red Banner Baltic Fleet]: "Both at Sea and Ashore"]

[Text] At the 26th CPSU Congress it was noted that the mission to save and to make more complete and more rational use of what the country has at its disposal requires a new approach to many management questions and the solution of many tasks of an economic, technical, social and educational nature. This relates fully also to our military life: the question of saving is a question of state significance.

On ships and in departments and at enterprises and institutions of the Twice Red-Banner Baltic Fleet the patriotic movement for savings and thriftiness has received wide scope. Naval sailors are striving to be careful to preserve equipment, to consume wisely material resources and electricity--everything that we supply to the defenders of the motherland for combat training and for living and recreation. For example, the crew of the escort ship "Neukrotimyy" saved tens of thousands of rubles' worth of fuel and lubricants in the training year that has been concluded. Servicemen of the ship and of the subunits that are commanded by officers V. Golovunin, L. Shevchenko, M. Fadeyev, A. Lapshin and A. Savitskiy have gained no little experience in the rational servicing of machinery. During exercise "Zapad-81," on the day of the landing party's debarkation, the engines of the ships "Bditel'nyy," "Krasnaya Presnya," "Ul'yanovskiy Komsomolets," and certain others operated on fuel that had been saved. And throughout the fleet 10 percent more GSM [fuel and lubricants] were saved than during the previous training year.

As experience indicates, an appreciable saving can be achieved without detriment to the quality of combat training and the combat readiness level only if combat-training, equipment operation and management activity are performed in planned and organized fashion.

Today the basic point in organizing combat training is the search for a way to intensify it, to raise its effectiveness and quality. For this purpose, during the training year that has been concluded, the fleet did major work to improve the training-materials base, the skillful use of which will enable the resources of the integral combat equipment aboard the ship and in its departments to be preserved. Baltic Fleet personnel have striven to see to it that each exercise, training drill and lesson gives maximum yield, so that all matters of combat training will be worked out to take tactical requirements into account.

Saving GSM and engine life does not at all mean, let's say, just making a major voyage on a given amount of fuel. It is important to get everything possible from each mile traveled through purposeful, well thought out saturation of the voyage with intense combat training and high-quality solution of missions. To destroy the target with the first shot, or the first salvo or torpedo or missile, to increase the specialists' skillfulness, to introduce progressive methods of operating equipment, and to maintain the equipment in model condition under any weather conditions--these are what the personnel of departments and ships are aiming at.

The success of this important matter is laid during the crew's training at the base. Submarines, for example, always prepare carefully for going to sea. Prior to occupying a position at a combat post, at the ship's instruments or machinery, each specialist, in a mandatory procedure, systematically improves his knowledge and skills at shore training complexes by means of actual layouts, mock-ups and simulators.

As a result, the number of voyages that ships must make to work out combat exercises is reduced, and the quality of their execution has grown.

On many ships, optimal regimes for operating electrical and mechanical facilities are figured out when preparing for a cruise. Such an approach to the matter has, for example, enabled the crews of the tankers "Sheksna" and "Lena" to save 2,500 hours of engine life.

Experience has been gained in the use of apparatus for stabilizing oil. Careful adjustment of the equipment at the base has enabled tens of tons of oil to be saved during each ship's voyage, to increase severalfold the time between repair for diesels, and to reduce to one-third the duration of planned yard repairs. On the rescue tug "Loksa," where A. Bileytis is the senior mechanic, about 6 tons of oil were saved in half a year through the skillful use of stabilization apparatus.

Still another reserve for savings is a reduction in the loss of fuel and oil during storage, transport and delivery to tankers, ships and storage facilities. For example, in the Nth chast' [unit], at the initiative of Engr-Capt 2d Rank N. Martyshov, the collection of spent oil has been organized for purposes of regeneration, that is, restoration of the original properties of the oil, for repeat use after the appropriate cleaning. The effectiveness of this work is reflected in the tens of thousands of rubles saved.

Electricity is used in all spheres of military work. Saving it aboard ship and at all enterprises and in garrisons has been achieved, thanks to integrated organizational and technical measures. Thus, in the subunit where Engr-Capt-Lt O. Kaminshkiy serves, loads are reapportioned in phases, depending upon the situation, and obsolete equipment is replaced in good time by more economical equipment, rigid control over the inclusion and exclusion of customers has been established, and the operation of power equipment at the idle has been precluded.

But it would be mistaken to assert, referring only to positive experience, that the requirement to save in the large and the small during the training year has been carried out creatively everywhere and with initiative. Unfortunately, there are still ships, units and enterprises where the search for reserves for savings has been allowed to drift. Some supervisors argue, they say, that when a combat exercise has been fulfilled successfully, or an assault is undertaken successfully

(regardless of the number of attempts), it writes off any losses, including overexpenditure of resources.

A weak knowledge of the peculiarities of equipment operation, low technical sophistication of some specialists and a reduction in vigilance in conducting watches lead, as a rule, to unjustified losses. Breakdowns of expensive equipment still occur through the fault of personnel, equipment operating regimes are violated, and preventive maintenance is not carried out on time. And sometimes a clear disdain for the requirements of the instructions is manifested. These factors alone, for example, can explain the fact that on the escort where Engr-Capt-Lt V. Zimin commands the electromechanical department, the motor oil was replaced prior to the date established by the instructions, without any reason, at a cost of several hundred rubles.

Of course, the fleet's command is taking steps to prevent such cases. However, a reliable barrier in the path of violations of the requirements of the instructions can be erected only by the joint efforts of commanders, the flagship's specialists and party and Komsomol activists.

...Warships have returned to the base. It would seem, from the first minute of mooring, that they would be provided with electric power from the shore and that their water and power-engineering installations would be "rested"--for new cruises ahead. But no, the auxiliary diesel generators on the ships hum, in support of the daily living systems, and the accumulator batteries of submarines are charged by their own engines, costing thousands of hours of engine life. What is the matter? It turns out that in the unit where officer V. Yegorov serves, the military builders have violated the deadlines for installing shore-based transformers.

At times ship engines operate at the idle for long periods because, through the fault of various chiefs, unloading has been prolonged. Or, without waiting for the approach of the on-duty tug, the warship starts to remoor. But the tug has already been summoned. Both are burning fuel and using up engine service life.

Both people's controllers and internal inspecting commissions that have been called upon find omissions in the management activity, in the upkeep of equipment, in the training-materials base, and in economic work.

Party and Komsomol organizations and propagandists and agitators are actively engaged in indoctrinating servicemen in a feeling of high responsibility for conserving socialist property and in a thrifty attitude toward combat equipment and military property during the training year. The fleetwide competition for the thrifty subunits, ships and units was given wide scope during the year of the 26th Party Congress. Publicity and comparison of results and the dissemination of advanced experience will enable searches for additional reserves to be made. Recently the fleet's command approved and recommended the introduction of the system for reporting progress in fulfilling commitments to save fuel, electricity and engine life that is being used on the cruiser "Oktyabr'skaya Revolyutsiya." It will help, as experience has indicated, to raise the percent in savings of material resources.

The drive for thriftiness is not a short-term one, nor the recognition of a current fashion. The path traveled by the grain from the pouring sweat of the fields to our table, by the oil, which is recovered under the severest conditions, to the ship's tanks, which are filled with various types of fuel and oils, and by the ores that are mined from the earth, to reliable and powerful machinery, is long and difficult. Behind it all is the enormous labor of the Soviet people. It is the sacred duty of each serviceman to appreciate and to take loving care of everything that the people have given us.

NAVAL FORCES

SUPPORT ACTIVITIES OF 'FOREIGN' PORTS

Moscow KRASNAYA ZVEZDA in Russian 23 Oct 81 p 2

[Article by Capt 1st Rank N. Trofimov: "In a 'Foreign' Port"]

[Text] In this port,* where ships of the Nth chast' [unit] are based, ships from other units call at times. Some to take part in joint combat activities, others to do some kind of repair work, and still others to resolve other problems....As a rule, a reliable businesslike contact is established between the officers of the Nth unit and those of the visiting ships. For all sailors help each other and exchange advanced experience.

But at a certain time in the past the ship commanded by Capt 2d Rank G. Dubin visited here. Such a contact did not occur with his crew. Certain sailors of this ship considered for some reason or other that during a visit far from their home port they can indulge themselves and both reduce the tightness of their military training and let discipline slacken. The ship commander's policy did much to promote this. From the first days he behaved arrogantly and was untactful in his attitude toward the local command. They tried to make him see reason, but he struck an attitude and demanded a certain "extraterritoriality." When they asked him about deficiencies, he began to show anxiety. But, alas, not with a view to setting matters straight. Something else worried the officer: how to avoid incurring a strict penalty in the matter.

Here is what is typical. While the ship was with its unit, such troubles had not been observed in Capt 2d Rank G. Dubin's conduct before. And the ship was not among those with a bad record. But now, when separated from the base, deficiencies were found in all degrees of acuteness. It appears that the crew and its commander did not withstand the tests of self-sufficiency and of maturity.

A ship in a "foreign" port....This is not some kind of an exceptional phenomenon. Today, when combat training of the fleet is oceanic in sweep, when ships make voyages of many months, during which their course often lies thousands of miles from their home port, not so rarely it can become necessary to drop in at some port or at some base. From the most varied bearings, on different missions, and for different periods, the ships of one unit can be moored at a port where ships of another unit are based.

Each such call, naturally, is attended by certain problems. The crew finds itself in unaccustomed circumstances at the new place and, therefore, a definite

*[The "foreign" port in the text refers to a port in the USSR away from home base.]

readjustment is required of the command and of the sailors. Questions of supply, cultural and amenities support, and other aspects of shipboard life have to be approached differently.

In order that a crew at another port will perform its service and carry out the tasks set for it just as precisely and strictly as at the home port, much must be done by the sailors themselves of the ship which has been sent temporarily to another base, by those officials who see it off to a distant port and by those who greet it there under temporary command.

Unfortunately, at times this overall concern about the matter does not occur. Let us take the case of the ship that officer Dubin commands. Out of touch with the home base, the crew is left without the monitoring due it. The local command does not always show strict exactingness toward it. The immediate command that sent the ship out has practically ceased to be concerned about the state of affairs on it.

I will cite still another similar example. Again, circumstances took shape under which the ship on which officer Babkin is executive officer stayed for a fairly long time at another garrison. Matters here went unfavorably on the part of the sailors. It would seem that the command would be disturbed and would compel the officers to study more deeply the situation within the crew. There were opportunities for this. Both the commander and the political worker of the unit had gone to that very garrison on official business several times. But they simply did not manage to visit the ship that was subordinate to them. Later, it is true, officers A. Teslenko and N. Chernov came from the unit. But their visit was too short to be productive. The representatives of the staff and of the political affairs section of the unit limited themselves to only a superficial acquaintance with the situation on the ship.

I have happened at times to hear complaints by other commanders and political workers that, they say, it is complicated to be constantly aware of the situation on ships that are temporarily located at remote ports, and it is difficult to effectively influence the people, so to speak, from a distance. Undoubtedly it is difficult. But it would seem that only one thing follows from this: the slightest weakening of attention to these ships is impermissible. Each of them requires, on the contrary, special attention, special concern.

This concern, that not one crew that has turned up at another port should feel isolated from its home collective, is characteristic of many commanders and political workers of units and soyedineniya [large units]. It is shown also in the creation aboard ship of an appropriate moral attitude and the development in people of a striving to represent their unit worthily in the eyes of the servicemen of other units and of the inhabitants of one garrison or port or another. Such an attitude is a guarantee of success.

At one time the ship on which officer N. Melakh served was moored where the ships of another unit were based. The berthed neighbors were able to learn much from this crew. Service here was performed in strict accordance with custom, with fine-tuned order.

The sailors had often spoken at party and Komsomol meetings about the honor of the crew and the honor of the home unit. And they have fortified their words with deeds. The crew had struggled actively to fulfill commitments in competition, and

the sailors had considered it their duty to be models in the eyes of servicemen from other ships, models in training and discipline. The crew carried out all its missions with good quality and in a short time. On visiting the distant port, being proud of the title "excellent," it not only did not discredit the title but also strengthened it.

This example refutes, in my view, the opinion of some skeptics that a temporary visit to another base inevitably causes some kind of losses for the crew: there, they say, it is more difficult to conduct training and educational work, the possibilities there are worse than at their unit, under customary conditions. It is possible, as we see, to arrange matters so that previously won positions will not be lost, so that not only will there be no planned losses, but there will also be a definite gain.

An experience affecting the ship where officer V. Peregudov serves is interesting in this regard. After visiting temporarily a garrison new to them, the sailors began with a careful study of local conditions. They managed to find out, for example, that the organization of the service could be perfected here even more effectively than was possible aboard ship, that in the new situation some exercises could be conducted in the simulator rooms that existed at the given base. Something else was also discovered in time. For example, many war veterans live in this city. Meetings with them that were organized on the ship were very interesting. And take this occasion. The service men managed to arrange a close contact with workers of one of the local enterprises. They held a joint evening of entertainment and a concert. All this helped, in the final analysis, to create a healthy moral atmosphere in the crew and to strengthen military discipline.

The successful adaptation of any one crew to the new situation, as has already been noted, depends greatly upon those officials to whom the ship is temporarily subordinated. Unfortunately, there are cases where some of them look at the "arrivals" from a consumer point of view: they assign people to guard duty, patrol and economic work--they primarily take from them without looking especially to see how this will reflect on the job. And other chiefs do not have enough hands to help the crew or to suggest, or to consult with its commander or political worker. It is pertinent that on the ship mentioned above, where officer Babkin is the executive officer, the local staff, led by the unit commander, was taken aboard once. However, they closed their eyes to the deficiencies.

Still another example. At one base, a ship from another base had arrived on a temporary base at a temporary mooring. It arrived after a long and difficult voyage, during which the sailors had showed themselves in the very best light. But the officers of the local staff and the political organ greeted them for some reason with unjustified suspicions: they said, who are you, "interlopers," who knows....

Such cases, in my view, should not take place in our life. We should understand precisely: our navy is one. There cannot be in it, strictly speaking, foreign ports, foreign ships, foreign subordinates, or foreign problems. In the final analysis, the crew of each ship, regardless of the sea in which it performs its service, and the servicemen of each unit, regardless of where they are based, do one great and important job, which is connected with defense of the motherland's sea frontiers. That means also that in their approach to this matter, everyone should be united, from one and the same state standpoint.

NAVAL FORCES

SURFACE VESSELS: TRAINING AND RELATED ACTIVITIES

On a Small Antisub Vessel (MPK)

Moscow KRASNAYA ZVEZDA in Russian 11 Aug 81 p 2

[Article by Capt 2d Rank N. Filatov, staff officer of the fleet: "From the Standpoint of Actual Battle"]

[Text] Capt-Lt V. Bobryshev fretted. The small ASW ship that he commands had just carried out a firing with depth charges. It did not go as the officer had anticipated.

And this despite the fact that the ship's mine handlers had done practically everything possible to achieve success. They had prepared the weaponry for use better than required by the norms. When the situation had suddenly become complicated, the mine handlers had quickly converted to a reserve variant. But alas, all these excellent actions were marred by inaccurate work by certain other specialists, particularly the sonarmen. They had generated errors in the data about the target that created additional difficulties for the mine handlers.

All this had occurred far from accidentally. The fact is that a definite kink was allowed back during the training for the crew at the base. All efforts had been devoted exclusively to training those sailors who were to use the weapon directly.

Obviously, there was a reason for such increased attention to the mine handlers. For it was they who were to play the chief role in the mock battle. But the whole trouble was that the training of other specialists was at this very same time overlooked by the commander. No one was disturbed, for example, by the fact that the sonarmen had relaxed in training and had practically stopped training themselves in the simulator rooms.

This case presents, in my view, a serious problem. Not everywhere yet have people been taught to approach the combat training of teams and of the ship's subunits in integrated fashion, thoroughly, from the standpoint of the ship's combat readiness as a whole. One of the manifestations of this is precisely a one-sided, superficial approach to the solution of tactical and firing problems, which still has not become outdated in some units. So the ship goes to sea and you hear at times: "The main thing is to defend yourself successfully, and the rest will take care of itself."

Actually, the practical application of weaponry is, figuratively speaking, the consummation of the training battle. In the final accounting, the one who forestalls

the enemy in opening fire and destroys him with accurate volleys or does so with missile launches is the one who wins the actual naval battle. But one must not forget, either, the fact that a missile firing or artillery shot, or, let's say, the dropping of a depth charge--is in and of itself only one of the components of modern battle. Success in battle depends in no lesser degree also upon other components--on the rapidity and state of coordination of the actions of all the sailors, including those not directly connected with the weaponry, on the reliability of the ship's navigation, on the commander's capability for tactical ingenuity, and on the competence and alignment of each maneuver. He who relies on skill in mock battle to destroy the target "writes off" deficiencies in tactical and nautical training and such other oversights that will prevent the venture from eventuating in a firing at all. Actually, high quality of combat training can be provided only where the ship's commander and the whole crew, in carrying out a combat exercise, not only concentrate attention on the firing as such but also view the firing problem as being, in its nature, a rehearsal for modern battle in all its complexity and diversity.

The example of commander of an escort, Capt 3d Rank G. Kovyrchev, is indicative in this regard. During the current training year his crew successfully carried out a large number of different firings. All of them were complicated. In testing the sailors' training, the staff of the chast' [unit] created a tightly packed tactical background. Firing had to be conducted under conditions of strong "enemy" counter-action, against actively maneuvering targets. But however difficult and important the firings were, Capt 3d Rank Kovyrchev mandatorily introduced his own revisions to the complexity: now and then he introduced scenarios about people being taken out of action, about battle damage to the equipment. Focusing attention on the firing itself, the ship commander did not forget about those who were not engaged in it.

Such an approach is characteristic also of many other progressive commanders. However, there are still some who permit miscalculations in this important matter. Not so long ago the small ASW ship that was commanded by Capt-Lt A. Kovtun carried out a firing problem. The sailors struck the target. Division commander Capt 3d Rank V. Kavelin, who was supervising the exercise, considered it possible to award the antisubmariners a "good" evaluation. But here is what, as it was explained, was concealed behind this fairly high mark. Many of the crew were making the voyage sort of as passengers. There was no practical training for those who did not participate directly in the firing--none had been planned and none was conducted. And other simplifications were permitted. Thus, let's say, the targets at which the sailors fired moved slowly and in straight lines. The tactical background for the exercise was deficient.

It is asked, is the "good" mark obtained by the antisubmariners justified?

Holes in the target are a more concrete and, let's say, effective indicator of skill. This is obvious, it is tangible. Here your skill is clearly visible--it hit or it did not hit.

But it is bad when all the diversity of the questions associated with a real rise in the ship's combat readiness reduces down to just this criterion--"it hit or it did not hit." It is bad when, in the pursuit of a hit on the target at any price, oversimplification and permissiveness are allowed.

It happens that two runs and, at times, three runs are made by some commanders in selecting the most convenient position for opening fire. Some wait out a stormy sea or reduced visibility or other complicating hydrometeorological conditions or navigational situation for a long time, or are on guard lest the results of the firing be harmed. Indeed, will such a thing be possible in real battle? No! Frequently it is precisely skill in firing from extremely inconvenient positions and in the poorest weather that can be required.

One can often hear the argument: resources are spent on each missile, torpedo, bomb and shell. They cannot be allowed, so to speak, to fly off with the wind. It is our duty to recoup the costs with well-aimed launches or volleys. This is correct. But provided that, during the well-aimed firing, there is a real increase in the crew's training, an actual growth in combat readiness. If the firing, even if it was successful, went according to a fixed pattern--"as long as it hits the target," if during the firing there was no place for a search for what is new or for tactical creativity, if there was no true concern about the battle coordination of the whole crew--then this also is a throwing of resources to the wind.

The question naturally arises about the need for a more demanding approach to the evaluation of each firing problem. Much depends here upon the policy of the exercise supervisor and the staff officers. When the exercise supervisor himself "writes off" various faults in an exchange for positive results, this tells unflinchingly on the attitude of the sailors toward the matter. At the same time, a searching, objective evaluation will persuade people to tighten up and to search for reserves both in firing training and in other types of combat training.

I have more than once managed to see how strict fleet staff officer Capt 1st Rank L. Lyubimov is toward those who approach the solution of antisubmarine warfare tasks one-sidedly and superficially. I recall that once Lyubimov considered it necessary to put off the departure of a ship for a firing because on the eve of it they had not conducted a tactical skull session and had not worked out completely the appropriate documentation. Authorization for the departure was obtained only when everything had been done as mandated. It is possible that the sailors would have destroyed the target even without this. On the whole they were ready for this. But the staff officer was concerned that the sailors not just use up munitions but also, in so doing, get a maximum from the assigned firing task. He did so to keep this from being simply a firing, a technological cycle in use of the weaponry, but to make it precisely a battle, a strenuous training battle that would harden, educate and teach.

Strenuous combat training is going on in the fleet. A day does not pass but what we, the staff, do not receive reports about successful missile, artillery and torpedo firings, the dropping of depth charges and of mine devices. It goes without saying, each such success is encouraging. But we should not flatter ourselves with an achievement. Our duty is to approach the execution of each firing task from the standpoint of actual battle.

VSTOL Training on Cruiser

Moscow KRASNAYA ZVEZDA in Russian 1 Sep 81 p 1

[Article by Sr-Lt N. Khanoknysh: "I Take Off from the Deck"]

[Text] A downpour fell just as I was preparing to land, after completing a mission. It was as if our ASW cruiser had been dissolved in a stream of water.

The voice of the flight supervisor sounded calm, and the instruments were working with precision, so there were no special grounds for anxiety. The airplane was descending. Now the flight deck was visible with fair precision. But the insistent streams of water again drowned the front glass of the cabin, and the enormous cruiser was suddenly transformed again into a scarcely distinguishable gray spot. The situation was becoming still more exacerbated when the aircraft hung above the ship and the jet wash raised a powerful wind spray from the deck. I would have to land, as they say, by touch. But it was not in vain that I had many flights behind me in which there had been training for just such a difficult occasion.

Then we analyzed this landing attentively. What is to be done if such a thing is repeated but this time a novice happens to be in the air? Various opinions were expressed. Maj Yu. Chrilov made the best suggestion. At the critical moment the craft must be tilted a little in order to obtain a view through the cabin's side glass.

I remembered the difficult landing on the eve of later flights. The cruiser was rocking gently on the waves and the muffled words of the command came. We carried out the training drill and went through the forthcoming mission inside the aircraft's cabin.

"In order to fly safely in the sky, one must 'fly' with confidence on the ground," a higher commander liked to repeat to me. I was convinced of the correctness of these words on more than one occasion. True, by virtue of the specifics of our ship, it should be added that it is also necessary also "to fly" on the deck.

Once more I mentally "replay" the mission. And again I return to the takeoff. To vertical takeoff from the deck. Previously I had taken off, as they say, in ordinary fashion. The craft went upward after a substantial run along the runway. And then at once a leap into the sky. For 4 years now I have been in the shipboard aviation service, and many times I had taken off vertically, and many times I have seen my comrades do this, but the sensation of a certain unusualness has not faded away.

...Aircraft technician Lt V. Osipov reports that the machine is ready for flight, and it has been completely fueled. The officer reports confidently, he knows that he has done his job conscientiously. And I have confidence in the lieutenant, although he has been wearing his officer's shoulderboards for about a year. But there is in this man a thoroughness, a professional dignity. Glancing at Osipov, I involuntarily recall my father, who, when also a young lieutenant, also saw his commanding officer, V. Robul', off into battle. And there were for my father no more difficult minutes than those of waiting for the return of the airplane. One day Robul' did not return from a mission. The bomber had been hit over enemy-occupied territory. Then for the pilot it was concentration camp, escape and return to

duty. The service brought my father back together again with his commander, and the military friendship united them for the rest of their lives.

After the war my father continued to serve for a long time in aviation, and he became deputy commander of an aviation regiment. My father questions me with interest about my service when I go home on leave. And he remembers the war. He once said that the farther away the war, the more persistently it breaks into his sleep, and it burns in his memory more painfully.

The chain of thought engendered by the resemblance of the aircraft technician to my father had carried me far away. But it had flashed for one instant. But it did not divert me. It called forth a surge of effort.

With a glance I take in the instrument readings: everything is at the norm. And I report to runway control:

"Ready for takeoff."

The cruiser is going strictly against the waves in order that it will rock less: the ship's commander strives to provide us with ideal conditions. And already now the jet engines are increasing the rpm's. After slowly lifting off the deck, the airplane goes upward vertically. The automatic systems help me to control it, but all winged machines require of the pilot great rigor and concentration, with no time for thoughtlessness.

The leader of the flight of two, Maj A. Basov, is already in the air. He has always controlled the No 2 man skillfully.

Today we are to carry out the next complicated combat-training mission. A target has been designated, and I go to the attack. In the headphones I soon hear the voice of Sr-Lt V. Voronyuk, who is at the place where the command center has been established:

"Excellent!"

Our flight is returning to the ship. Now a tiny point appears. It quickly grows and acquires the sharp outlines of the cruiser, which serves as our airfield and our home. The huge ship can be compared with a small city. Here there are several deck-streets, the total length of which is measured in kilometers, and a multitude of service and living premises.

We return from the mission in a good frame of mind. Ahead lie new flights above the ocean.

Military Hospital Rescue Operations

Moscow KRASNAYA ZVEZDA in Russian 30 Sep 81 p 1

[Article by Capt 2d Rank A. Slobozhanyuk (Red Banner Pacific Ocean Fleet): "The 'Ob'' Hurries to the Rescue"]

[Text] The order arrived at night: the military hospital ship "Ob'" should lift anchor quickly and proceed at full speed to a rendezvous with a trawler, one of whose officers required urgent medical help. Ship commander Capt 3d Rank V. Shatov glanced at the point marked on the map:

"Perhaps we shall not reach it for days."

Lt Col Med Serv N. Kuz'min--chief of the hospital--saw himself that the "Ob'" was hundred of miles from the trawler, but said:

"We must hurry, Vladimir Ivanovich. Each hour here is costly."

Only these two marks--"full speed" and "fullest speed"--were on the engine telegraph indicator during the departure. The ship's medical personnel readied everything for the future operation. The case was not entirely unusual, for example, the physician on the trawler had no doubt about it in his diagnosis--acute appendicitis. Yes, appendicitis, as they say, is the ABC of surgery. But on opening up the abdominal cavity, the young specialist did not know how to locate the inflamed appendix. It was then that the anxious message arrived aboard the "Ob'."

In the area of rendezvous, the sea was stormy. The ship could not approach the trawler without risk of collision. Helicopter commander Capt Yu. Peshkov reported that he was able to reach the patient, but the surgeon reminded him that the patient had an open cut and he had to be transported no way but by stretcher.

"That means a launch," the ship's executive officer summed it up briefly.

The first attempts of the launch to approach the trawler's side proved unsuccessful. The boat was lifted up on the crest of a wave so high that the deck of the trawler turned out to be at a completely unreachable distance. Then the ocean swings changed places. It was necessary to perceive the moment that the deck levels matched and then to transfer the stretcher.

Finally this succeeded, and the launch headed toward its ship. And again--the dangerous swinging, although here the high board of the "Ob'" sheltered the daredevils from the waves and the wind.

When the patient, who had displayed, incidentally, no little courage and self-control in this awkward situation, was sent into the operating room, chief of the laboratory Sr-Lt Med Serv V. Sharapov and his assistant, PO 1st Class A. Tarasov, quickly made the required analyses. The operation, which took place during rather heavy seas, took no more time than would be required in a shore hospital. Maj Med Serv V. Borisov was able to find the appendix and remove it. During an especially strong list the surgeon merely pressed the side of the operating table a little more firmly.

Soon they reported to the trawler that the officer's life was out of danger. They reported also the opinion of specialists that the young doctor of the ship had made his diagnosis accurately and that his tactical actions during the operation were correct. The case was simply uncommonly complex.

The ship with the red cross on its side continued its voyage in the ocean. The Capt-lt quickly recovered. Finding himself in a floating hospital, he was surprised at nearly every step, although he had served on no few ships and had visited various types of ships and boats. Anyhow, the "Ob'" hosts were accustomed to such reactions from people who found themselves there for the first time. Here, for example, there are actually many specially made items of equipment. Let's say, in the offices for functional diagnostics and medical supervision, a six-channel

electrocardiograph was installed, by means of which a physician can simultaneously obtain a phonogram, a cardiogram and data about the patient's pulse frequency, arterial pressure and temperature. The office also is equipped with other modern equipment, which, incidentally speaking, even an experienced specialist simply does not master. But Capt Med Serv V. Shishkin feels confident here. He has mastered all the equipment and uses it successfully.

Doctors of 16 specialties work on the hospital ship. They can extend qualified medical assistance to any patient in that area of the ocean where our combat and auxiliary ships perform their service.

"Ob'" medical personnel also have extended assistance in the ocean to patients from foreign ships. In the testimonials book here there are enthusiastic inscriptions by the public-health ministers of a number of countries and other state and military figures that were made during the ship's visits to foreign ports. The diagnosis that was made for a sailor from a Greek tanker was unusual for Soviet physicians: malaria. But the hospital's specialists overcame even this disease, which has been forgotten in our country. Capt Med Serv I. Kolesnichenko once turned up in an unaccustomed role: he delivered a child for a woman from an Indonesian ship.

The rich, diverse equipment of the floating hospital, including even athletic equipment, helps the sailors who find themselves aboard the "Ob'" to remove the psychological burdens that are inevitable on extended cruises, to restore efficiency, to be diverted from the tension of underway watch for a time.

This ship does not stay at domestic moorings for long. Its working place is in the ocean.

On Small Missile Vessels [MRK]

Moscow KRASNAYA ZVEZDA in Russian 3 Oct 81 p 1

[Article by Sr-Lt A. Rybalochka, executive officer of the small missile ship "Tsiklon": "A Prize Firing"]

[Text] The crew of our small missile ship (MRK) "Tsiklon" was readied for a firing of the main system. For the first time we were to carry out under extremely complicated conditions a task that would sum up the results for the training year that is being concluded and which, if successful, would be assessed very highly--for the Navy Prize. Our rivals in socialist competition, the crew of the MRK "Tayfun," were training together with us.

The situation on the ship in the days of preparation for the competitive launches had been extraordinarily strenuous. The sailors had been trying to refine the operations at the combat posts into automatic actions. The weaponry and equipment had been thoroughly checked. It was as if the crew had acquired a single breathing rhythm.

During these days we wanted especially to be like our famous predecessors--the Pacific-Ocean small-boat operators of the Great Patriotic War period. The soyedineniye [large unit] of small-boat operators was awarded the Order of the Red Banner and two subunits were given the high guards title for feats they had performed. War veterans often are our guests. And, fatherlike, they ask us how we perform our

service, how we continue to carry their combat relay baton. The eyes of the gray men suddenly become young when they recall their combat youth. Each of the veterans is obligated to give an example of combat friendship, of mutual assistance--those most important qualities which helped Soviet sailors to undertake with honor the most complicated situations and to achieve victory over a numerically superior enemy. We prove with pride to the frontline veterans that this remarkable tradition is alive and is being continued. It was manifested precisely also during the training year that is being concluded, especially during the period of preparation for the prize firings.

The commander of the missile-gunnery department (BCh-2) of our ship, Sr-Lt N. Drozdov, is considered by rights to be a master of his business. All the firing missions invariably are carried out excellently. The military work of our comrade has been evaluated for worthiness--this year the officer was awarded the order, "For Service to the Motherland in the USSR Armed Forces," 3d degree. His colleague with the MRK "Tayfun," Sr-Lt O. Zalutskiy, has less experience, and he has come several times to Drozdov for advice and has always received an answer to any question. Meanwhile, the ships and the subunits of the same type are conducting among themselves a persistent competition for first place in the chast' [unit].

BCh-2, which Drozdov commands, has been leading confidently all summer. But then during recent antiaircraft firings, Zalutskiy's subordinates were able to get around our masters of precision firing. It stands to reason that the final result will come down directly to the finish line of the training year. Right now it is impossible to forecast who will get the upper hand, who will take the summit.

And the commander of our ship's navigation unit, Sr-Lt F. Galiullin, more often is a caller on the "Tayfun," visiting Sr-Lt V. Osadchiy, who is a little more senior in service. First, Osadchiy helped our navigator to take examinations for clearance for independent control of the subunit, then advised him how to organize the training better in the specialty. Prior to each sailing, and especially during company sailing, these officers have no few common concerns.

I frequently see the commander of the "Tayfun," Capt-Lt A. Sobolevskiy, aboard the "Tsiklon." He and our commander, Capt 3d Rank G. Yur'yev, solve their problems together. Success in battle depends upon the preciseness of the plans and the preciseness of mutual actions. For many a time they mentally "travel" each mile, each cable's length, as the ships get underway from the mooring lines and they start up the work of tens of sailors, and they analyze all those tricks that can be set for the "enemy." And for every possible ruse of his, they find an answering maneuver. Capt 3d Rank G. Yur'yev has experienced many training battles, and he generously shares his rich experience with the commander of the "Tayfun."

I also have a friend, a colleague in assignment--the executive officer of a neighboring boat. Capt-Lt A. Gey has been occupying the post for a longer time. I myself cannot determine how successfully my conduct has been in the past, but I am confident that the comrade's support has helped me to avoid many errors. Especially in educational work, where living experience and a commander's wisdom are so important.

Capt-Lt A. Gey helped me to understand in detail ship maneuvering during missile firing and certain other questions. It happens that he also comes to me for advice. Such a firm friendship and constant contact aid professional growth.

In accordance with the example of the officers, good contacts have been established among the seagoing warrant officers, the petty officers and the sailors of both ships. And still this firm friendship does not stifle the severity of the socialist competition. If, in summing up the next results, it is announced that we have lagged behind the "Tayfun," our wits will find no few grounds for mild jokes. Anyhow, we will share the secrets of success with the neighbors. On the eve of the prize firings there was no talk at all about any kind of secrets, for we have jointly defended the honor of the Pacific-Ocean sailors in in-absentia competitions with servicemen of other fleets.

And so the missile battle broke out, and a mighty thunder rumbled over the ocean target. All the missiles destroyed the target with precision.

But the competition for the Navy Prize still has not been finished. A face-to-face encounter with our rivals, a new training battle, and real combat work at the finish of the training year are to be performed, and naval friendship will help us do so with good quality.

Damage Control Training

Moscow KRASNAYA ZVEZDA in Russian 9 Oct 81 p 1

[Article by Engr-Capt 3d Rank Sh. Kutkin (Red Banner Pacific Ocean Fleet): "During a Demonstration Exercise"]

[Text] The crew was preparing to carry out an important mission, when an inspector from the Inspectorate for Navigation Safety arrived at the ship. On the whole he was content. But now he sounded a sudden inspector's scenario--to put out a "fire."

In the end, the sailors won over the fire. But the actions of some of the servicemen, especially when the situation was complicated, were slow and imprecise, and the senior boatswain supervised the emergency party hesitatingly. The inspector recommended to the chas't' [unit] commander that a demonstration exercise in damage control be prepared and conducted on this ship, since such deficiencies had been observed also in other crews.

And now, on the ship that Capt 3d Rank S. Berezovskiy commands, persistent practices have started. The fact is the demonstration combat exercises have the purpose of showing officers, seagoing warrant officers and petty officers the correct procedures for conducting exercises and therefore should be very thoroughly prepared.

Officers of the staff and secretary of the unit's party organization, Capt 3d Rank N. Kolypayev, extended great help to the ship's specialists. Practices were conducted under conditions that approximated actual combat conditions to the maximum, with the wide use of means of simulation and the actual delivery of water.

During the demonstration exercise in damage control that was held at the concluding stage of the summer training period, the command personnel of all the unit's ships were invited for an acquaintanceship with advanced experience and advanced procedures. It began with "an explosion of an aerial bomb," as a result of which "a hole had been ripped" on the port side of the ship's auxiliary engine room. Cold outside water poured into the compartment. (A simulated display permitted a full picture of an actual tear to be created.)

PO 1st Class Yu. Ortikov, on signal from the emergency alarm, first rushed, under icy sprays, with a heavy patch in his hands. His comrades hurried to help him. Accurate reports about progress in sealing the break went to the main command post.

Still they not able to pump out the water that had been gathering in the compartment, and a "fire" had blazed up in the bow compartment. (A fire actually blazed, an umpire having lit a smoke pot to hamper the sailors' actions.) The fire-fighting team under senior boatswain Seagoing Warrant Officer S. Likhomanov skillfully undertook to fight the fire. After a reconnaissance of the focus of the fire, servicemen in insulating gas masks skillfully beat down the flame with powerful streams of water and brought fire extinguishers to bear, although visibility in the compartment was almost zero because of the dense smoke.

At the critique of the exercise, not only positive aspects of the crew's action in the damage-control effort were noted but certain deficiencies were analyzed. In particular, some sailors lost their bearings in the smoke, others did not find their place at once in the work at the most dangerous areas. There was a united opinion: during the new training year, demonstration exercises of a similar type should be conducted more often, since this will enable the servicemen's skills to be more effectively sharpened and the sailors' actions in the drive to control damage to the ship to be brought to perfection.

'Corridor' ASW Tactic Discussed

Moscow KRASNAYA ZVEZDA in Russian 10 Oct 81 p 2

[Article by Vice-Adm N. Legkiy: "The Commander's Engineering Competency"]

[Text] The search group of the surface ships was deployed in such a way as to monitor reliably a "corridor," within which, under the terms of the training mission, an "enemy" submarine, which had broken into the protected zone, would be maneuvering.

Soon one of the ships established a contact with an underwater target. It would seem that victory was close. But what distinguishes modern naval battle is the fact that the opposing sides, having excellent technical armament aboard ship, are able to confuse the enemy with an unexpected tactical run. This, in particular, is what the submarine commander had done. After skillfully using sonar interference, he sharply changed the depth of submergence, concealed himself for a certain time, and then changed course and speed. But for all that, he was not able to break through--the escort commanded by Capt 2d Rank Yu. Ryzhkov barred the way.

The escort's maneuver was on the brink of risking the forming of a breach in the underwater "horseshoe" through which the "enemy" submarine could slip away. But Ryzhkov took the risk. And his decision, as the subsequent analysis indicated, was the only true one in the given situation. What was it based on?

In weighing his tactical run, Ryzhkov put himself in the place of the submarine commander, who, most likely, could argue this way: there is a "corridor," although it is limited, but wide enough for a breakthrough. However, it is impossible to proceed north--there is a surface ship there that has observed the submarine; the eastern direction leads to shallow waters, where maneuver along the vertical is extremely difficult. Only one thing is left--to break through to the west, screened

by interference. After visualizing this, Ryzhkov, along with ASW team specialists, quickly made computations, and the escort took up a position suitable for a search for and attack on the submarine. An essential part of the commander's calculations was a comparison of the power and electronic potentials of the escort and of the submarine. In other words, the skillful tactical run was based on high engineering competency of the commander and other officers of the ship.

This episode is for us extremely representative for a correct understanding of the peculiarities of modern naval battle--battle that is dynamic and short-lived, during which the most diverse situations arise. In such a battle a decisive prerequisite for success frequently can be not the numerical preponderance of forces but the capability of the commander to evaluate comprehensively the situation that has been created and the potential of the weaponry and the power and electronic potentials of the opposing sides, and to guess in advance the enemy's action options and to oppose them with a decision he does not expect.

It is obvious that it is not easy to do this. The enemy also will be striving to grab the initiative. One must also expect from him tactical shrewdness, plus combat cunning and daring in the use of various combat resources. In such a confrontation the tactical breadth of horizon of the ship commander, his military and technical erudition and his engineering competence play an exceptionally important role.

The qualities necessary for victory in battle are shaped in an officer by the whole system of training and education. Active forms of training play a special role, primarily practices, group exercises and drills.

Here I would like to single out one peculiarity to which other exercise supervisors do not always pay attention. This is the matter of the skills of officers for adopting skillful, unorthodox decisions, which very often require great personal courage on minimally short notice. For in modern naval battle, such a situation can become complicated, when the ship commander does not have the potential for obtaining exhaustive instructions from his senior chief or recommendations of the staff or of specialists from the flagship, and he himself should take upon himself the solution of tactical and technical questions which, under ordinary conditions, would have been reviewed at higher levels of control. This requires that each commander develop his own self reliance, and initiative, improve continuously his professional training, and be ready to carry out the obligations of the post one level higher than his own. By the way, the escort commander mentioned, Capt 2d Rank Yu. Ryzhkov, has been cleared to control a group of ships at sea.

Instructive, in our view, is the experience in teaching commanders that has been gained in the N-th chast' [unit]. The officers here always operate in a complicated tactical situation during practices and group exercises. Rigid deadlines and an orientation to actual battle are set for evaluating it and for the ensuing combat work. In this process, as a rule, elements of competition are introduced.

Along with expansion of the tactical horizon is the matter of arming officers, primarily ship commanders, with deep technical knowledge. This is based upon the fact that a ship should be commanded by a good tactician, not by someone who simply knows how to adopt skillful solutions but is unfailingly capable of supporting his schemes with sensible engineering. It is for this purpose that exercises and drills are conducted systematically in the unit, during which officers solve tasks

of a technical nature, to sharpen their skills in maneuvering under various operating regimes of the propulsion plants and in the wise provisioning of power, based upon this installation, to the various combat posts.

Exercises and drills are planned that take into account the level of the individual training of officers and that occur, for the most part, in a well-equipped electro-mechanical training facility. The officers are enabled not only to observe the processes that occur in the ship's power systems at various underway regimes but also to simulate maneuvering at all stages of the training battle. In so doing, special attention is paid to the officers' skills in coordinating the technical knowledge that has been acquired with questions of tactics. Examinations on standardizing documents that regulate the use of propulsion plants and systems for supporting combat capabilities and damage control on the ship are periodically given to the commanders and executive officers of ships.

The commanders' pay rate for engineering competence has given a creative impulse to such a stabilizing form of training as emergency technical meetings. While previously, only individual and, at times, uncoordinated principles of the manuals and instructions and tactical and technical data were reviewed, now questions that give a deeper and more integrated notion of the tactically competent use of the technical equipment are also taken up at the emergency meetings. Incidentally, as a result, commanders have begun not only to use equipment better and more effectively in mock battles but they are also more concerned about saving electricity and engine and motor life.

In expanding their technical horizons, ship commanders with great competence can teach subordinate officers various specialties and are capable of influencing their professional growth extremely concretely. And those exercise supervisors who, when developing their plan, are concerned about creating a complicated situation that will impel officers toward creativity and toward initiative in the use of weaponry and technical means, the ship's fire power, and its maneuvering qualities, are acting correctly. It is important, in so doing, that the officers' creativity rest on a firm foundation--a knowledge of the prescribed rules, the requirements of the governing documents, precise engineering calculations and advanced experience. There is a primary base for this: that each graduate of a higher naval school receive the diploma of military engineer.

Meanwhile, it must be recognized that not everywhere have exercises and drills yet become genuinely integrated schools of combat skill. At some of them it is still possible to encounter stereotyped actions that are engendered not only by the weak tactical training of some officers but also by their low technical competency.

Capt-Lt Ye. Danilov, the commander of a ship, deserves a serious reproof, for example. In preparing to carry out combat exercises at sea, he does not always trouble himself with developing original variants for searching for and attacking the "enemy" that take into account the potential of the equipment and weaponry, and he often relies upon the prompting of a flag officer or of the appropriate specialists on the staff.

Once, before going to sea, Danilov reported to the senior chief that his crew was ready to fulfill its assigned mission. However, an inspection indicated the opposite. For some reason, the commander had not seen the deficiencies that were discovered, particularly in the special training of the sailors. The reason, anyhow,

was soon explained. Danilov, it turns out, did not do the required monitoring of the sailors' drills, did not organize competition on tasks and standards as he should have, and did not require this of subunit commanders. For what is simpler than spending time during drills with a test table and comparing test-table results and the actual results of the combat work in accordance with the indications of built-in instruments? There are not enough hands to do everything, Danilov justified himself later, and, he says, there is not enough time. It turns out that this officer does not even have time for the main thing, and his immediate superiors look on while everything slips through their fingers.

Individual officers, especially young ones, assume that there is no great harm if, in a training battle, someone, fearing error, does not display initiative, does not resolve to take upon himself responsibility for a skillful decision on the use of weaponry and equipment. And they justify this by the fact, they say, that actual battle will compel one to think in another way, that it will increase creative activeness. No, battle does not forgive tactical or technical incompetence or a commanders' indecisiveness, but it mercilessly punishes the slightest error.

It is wise to note here that people at the front, those with much combat experience, always found it possible to augment their tactical and technical knowledge and practical skills. We recall that during the Great Patriotic War, before each battle, if, of course, the situation permitted, loss of the battle was exercised. Commanders of ships were trained in rapid evaluation of the situation and the adoption of decisions that took into account the lessons of preceding duels. We recall that new ships and weapon systems were mastered in the shortest periods. The intensive method of training of commanders and crews of ships has completely justified itself. This should not be forgotten now.

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SOVIET VIEWS ON WEAPONS IN OUTER SPACE

Moscow SOVIET MILITARY REVIEW in English No 12, Dec 81 pp 45-47

[Article by Yu. Listvinov: "No Weaponry in Outer Space"]

[Text]

In 1982 humanity will mark the 25th anniversary of the beginning of outer space exploration. The launching by the Soviet Union on October 4, 1957 of the first earth satellite was the greatest achievement of science and technology in the 20th century. Today man "is making himself at home" in outer space. The use of outer space is of great benefit to humanity in such fields of life as communications, exploration of the Earth's natural resources, meteorology, navigation and many others.

The Soviet Union has always advocated using outer space for peaceful purposes. It was the initiator of the international treaty on banning nuclear weapon tests in the atmosphere, outer space and underwater concluded in 1963. In 1967 the Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space was concluded and in 1979 — an agreement on the activity of states on the Moon and other celestial bodies.

However, these international documents do not exclude the possibility of stationing in outer space kinds of weapons which do not fall under the definition of weapons of mass destruction. As a result, the danger of a militarisation of outer space remains and lately has even increased.

This danger has come from the USA. We should like to deal at length with the space ambitions of the Pentagon.

The US space programme was from the very outset largely geared to the requirements of the Pentagon. The sixties saw projects for space nuclear systems crop up one after another. However, these projects did not meet serious support at the time from either the civilian or the military

authorities of the USA. They understood that the Soviet Union had the scientific and technological potential to take the necessary countermeasures. The excitement over the projects for the creation of nuclear systems in outer space began gradually to die down.

In recent years the United States has been gripped by a new fit of the "star-war malaise." In February last year the journal *Aviation Week and Space Technology* reported that the Pentagon was preparing to send into outer space modifications of the Minuteman 2 and Minuteman 3 ICBMs.

Then followed reports on the Pentagon's intentions to create in outer space a whole fleet of reusable shuttle ships. The fate of the shuttle programme, kept a secret, was decided in Congress in the summer of 1971. The scales tipped in its favour largely because the legislators had no doubts as to the "military value" of the programme.

During the 1970s all work on this programme was practically carried out under the Pentagon's guidance. As a result, the Defence Department has publicly announced that all shuttle operations undertaken by the army, navy, and air force would be coordinated by a "space command" specially set up for the purpose. Citing high-placed sources, the *Air Force Magazine* confirms that the Pentagon is considering using shuttle craft as its own private car pool. And *Newsweek* said that the shuttle could become the United States' most powerful potential weapon and could release a whole swarm of "transnuclear" genii.

The point is that nuclear weapons — atomic and hydrogen bombs — came before ballistic

missiles. In other words, basically new means of destruction came into being before basically new means of their delivery. The process of the emergence of weapon systems for outer space proceeds in the opposite direction. So far only the new means of delivery have come into being. The new strategic weapons of the "postnuclear generation" do not exist as yet. And the United States is out to fill the gap. One of the top projects now is the designing and development of super-power laser installations.

Already in the early 70's high-ranking Pentagon officials repeatedly declared that the creation of the laser weapon was no longer at the stage of theoretical study. The new "super-weapon" may be expected by the end of the eighties. Super-powerful and relatively compact high-energy laser installations are now being designed.

For what purpose? Assistant Secretary of the Air Force G. L. Hansen once frankly said that possession of such weapons would enable the US to destroy Soviet second-strike ballistic missiles over Soviet territory or over the ocean wherever they might be launched from submarines.

In recent years these plans have been further concretised. According to reports, the shuttle can be used to create a network of battle stations equipped with laser installations. For this, in the opinion of US experts, it is sufficient to send about two dozen such stations into polar orbit at an altitude of 5,000 kilometres. Once this project has been realised, Aviation Week and Space Technology says, the US will be able to strike at any point of the globe.

According to American press reports, experimental (so far bulky and not too effective) laser installations have been used to bring down helicopters, planes and even missiles in proving-ground conditions. Models which are expected to be more effective and lighter are on the way. The first tests of the laser weapon in space are planned to begin in 1982. And these are not only plans. Already during the first flight of the space shuttle Columbia the US astronauts tested a laser gun sight.

With an eye to "star-wars," the United States is stepping up the development of diverse types of space interceptors. In early 1968 the then Defence Secretary Robert McNamara confirmed that the US possessed a limited capability of intercepting and destroying Soviet satellites. However, the keenest interest among observers was evoked by reports which appeared in April 1977 on a Pentagon report to Congress concerning its secret

programme for developing devices to destroy Soviet satellites. In view of the growing significance of military operations in outer space, the report stressed, the programme was to be accelerated so as to deploy an interception system by 1982. Evidently because they were aware that such plans ran counter to the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, to which the US too had affixed its signature, the compilers of the report asked that no information concerning the development of anti-satellite systems be released under any circumstances.

The increasingly frequent leaks concerning the development by the USA of these systems, however, show that the Pentagon is ignoring this recommendation. In line with the policy of whipping up tension, the publication of what seem to be sensational US achievements in this sphere has become a common thing. No wonder, then, that Washington is not concealing its plans for the military use also of space shuttles. At the same time, the technological and combat characteristics of the projected interceptors are enveloped in total secrecy. The US press has carried only hints that the interceptor satellites will be equipped with laser guns or special electronic devices.

Without going into the details of other US projects for militarising outer space it should be noted that they all are in one way or another directed at the USA achieving military preponderance over the Soviet Union and are subordinated to the plans for creating a pre-emptive strike weapon.

It is quite obvious that the Soviet Union cannot allow this. It insists that outer space should always be free of any kind of weaponry, that it should not become an arena of the arms race and a source of exacerbated relations between states.

Conclusion of an international treaty on banning the stationing of weapons of any kind, the laser included, in outer space, will, in the opinion of the Soviet Union, promote the achievement of these goals. As is known, the project of such a treaty was submitted for consideration at the 36th Session of the UN General Assembly. The project foresees states undertaking obligations not to orbit objects with weaponry of any kind, not to install weapon systems on the celestial bodies and not to station them in outer space in any other way. Weapons should not be installed on the piloted reusable spaceships either already existing or to be designed in the future. The states which sign the treaty, as it is pointed out in the project, also pledge not to destroy, damage, disrupt the normal functioning of or change the flight path of cosmic objects should they orbit in accordance with the clauses of the treaty.

The new Soviet initiative is a concrete example of implementing the decisions of the 26th CPSU Congress, which adopted a programme of curbing the arms race and securing peace. This initiative is in striking contrast with the militarist activity of the US Administration. The USSR submitted its proposal at the time when Washington took the decision to begin full-scale production of neutron weapons, thus taking one more dangerous step towards unleashing a nuclear war.

It goes without saying that the Soviet Union possesses all the means and possibilities to resist the military-space ambitions of the transatlantic strategists. However, a competition of such a kind contradicts its principled stand — not to allow continuation of the arms race, persistently and consistently to struggle for its cessation, for real disarmament. The Soviet Union considers that it must not be allowed to spread the arms race to outer space, to give rise to competition in creating new types of weaponry. The USSR proposes another path — the path of negotiations on this important question too. This path answers the interests of all states, all peoples.

The Soviet people, and world public at large expect the United Nations to regard with attention and a sense of responsibility the new Soviet initiative and to pronounce in favour of negotiations for the purpose of working out and concluding a treaty whose participants would undertake the obligations to arrive by common effort at a great and humane goal — to exclude militarisation of outer space.

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